



RESERVOIR PERFORMANCE MONITOR

FILE NO: CH136902	COMPANY LARAMIE ENERGY LLC
API NO: 05077105300000	WELL GUNDERSON 0994-14-17E
	FIELD VEGA
	COUNTY MESA STATE COLORADO

Ver. 4.10	LOCATION: SHL: 1076' FSL & 1146' FEL BHL: 1076' FSL & 1146' FEL SEC 14 TWP 9S RGE 94W	OTHER SERVICES RAL
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PERMANENT DATUM LOG MEASURED FROM DRILL. MEAS. FROM	GL KB KB KB	ELEVATION 7272 FT 30 FT ABOVE P.D.	ELEVATIONS: KB 7302 FT DF GL 7272 FT
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DATE	21-Jun-2018	
RUN	1	1
SERVICE ORDER	US136902	
DEPTH DRILLER	8217 FT	
DEPTH LOGGER	8181 FT	
BOTTOM LOGGED INTERVAL	8181 FT	
TOP LOGGED INTERVAL	2463 FT	
TIME STARTED	8:30	
TIME FINISHED	14:30	
OPERATOR RIG TIME	6 HOURS	
TYPE OF FLUID IN HOLE	WATER	
FLUID DENSITY	NA	
FLUID SALINITY	NA	
FLUID LEVEL	69 FT	
LOGGED CEMENT TOP	1542 FT	
WELLHEAD PRESSURE	0 PSI	
MAXIMUM HOLE DEVIATION	NA	
NOMINAL LOGGING SPEED	10 FMIN	
MAX. RECORDED TEMP.	237 DEGF	
REFERENCE LOG	BAKER HUGHES RAL	
REFERENCE LOG DATE	20-Jun-2018	
EQUIP. NO.	ML-4268	GRAND JCT.
RECORDED BY	T. NEWELL	
WITNESSED BY	NA	

IN MAKING INTERPRETATIONS OF LOGS OUR EMPLOYEES WILL GIVE THE CUSTOMER THE BENEFIT OF THEIR BEST JUDGEMENT. BUT SINCE ALL INTERPRETATIONS ARE OPINIONS BASED ON INFERENCES FROM ELECTRICAL OR OTHER MEASUREMENTS, WE CANNOT, AND WE DO NOT GUARANTEE THE ACCURACY OR CORRECTNESS OF ANY INTERPRETATION. WE SHALL NOT BE LIABLE OR RESPONSIBLE FOR ANY LOSS, COST, DAMAGES, OR EXPENSES WHATSOEVER INCURRED OR SUSTAINED BY THE CUSTOMER RESULTING FROM ANY INTERPRETATION MADE BY ANY OF OUR EMPLOYEES.

REMARKS

RUN 1 TRIP 1: 2 OPERATIONS RUN IN THE WELL

OPERATION 1: RAL/GR/CCL RUN CENTRALIZED

OPERATION 2: RPM/GR/CCL RUN IN PNC-3D MODE

SJ: 6395' - 6416'

SJ: 7616' - 7636'

EQUIPMENT DATA

RUN	TRIP	TOOL	SERIES NO.	SERIAL NO.	POSITION
1	1	PCM	8250EA	11902197	FREE
1	1	TEL/CCL	8248ED	10407093	FREE
1	1	GR	2812LB	11621284	FREE
1	1	RPM	8281EA	10190985	FREE
1	1	RPM	8283PA	10068031	FREE
1	1	RPM	8281FA	10076673	FREE
1	1	TEMP	8255XXA	166341	FREE

RPM MAIN PASS G-SAND

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017

Patches: 4

Plotted: Thu Jun 21 16:07:13 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-14-17E/p354h03.prm
 LOGGING MODE: DEPTH DIRECTION: UP
 TOP DEPTH: 2448.229 ft BOTTOM DEPTH: 3100.299 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM

RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.88	in	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"

CURVE DESCRIPTION REPORT

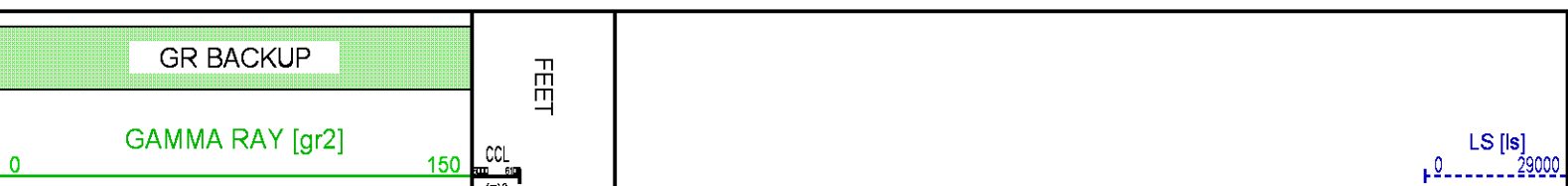
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

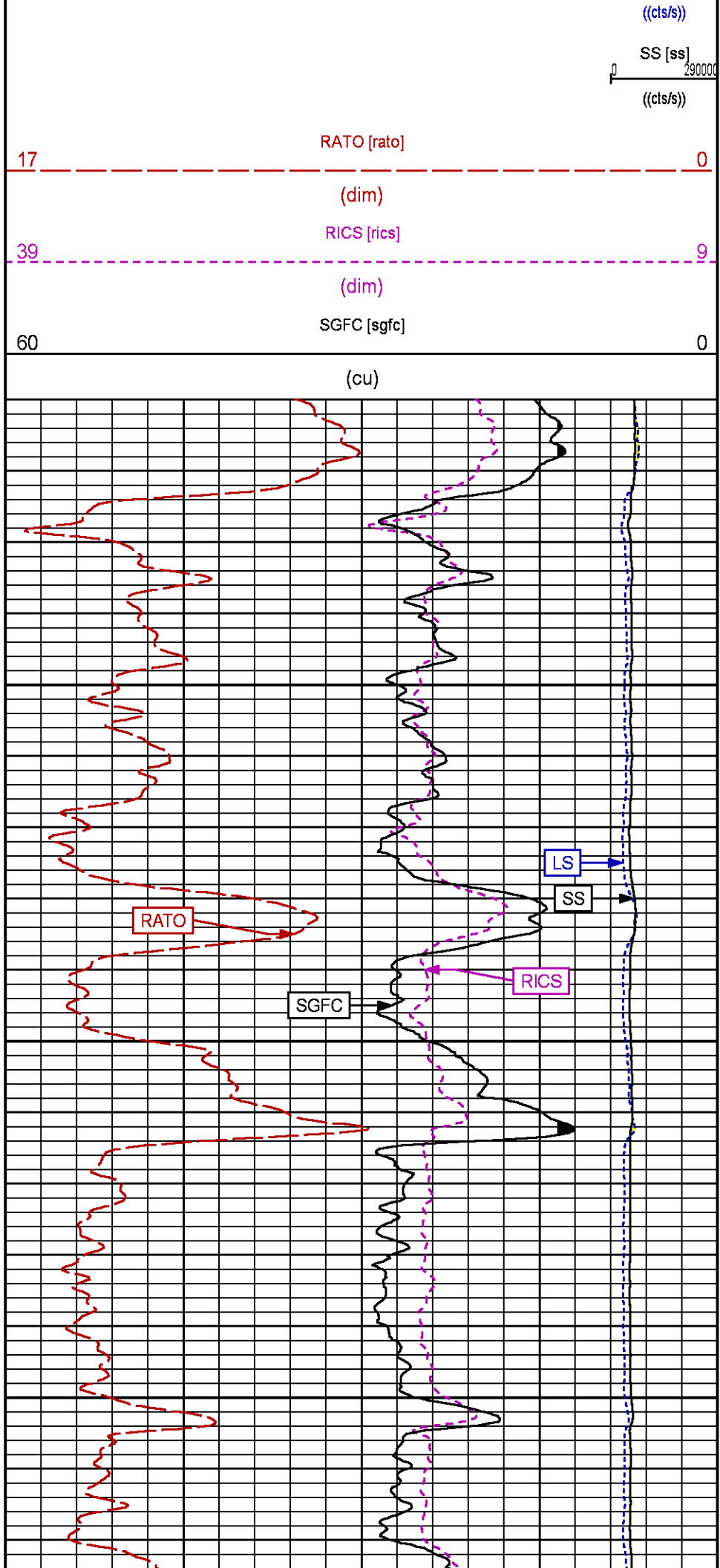
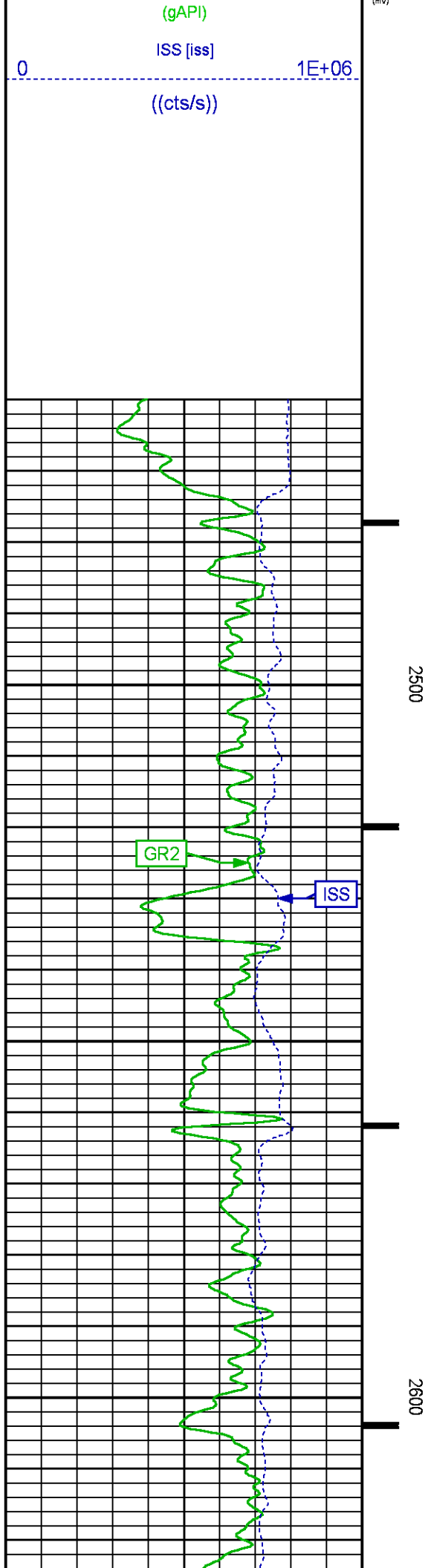
CURVE MEASURE POINT OFFSET

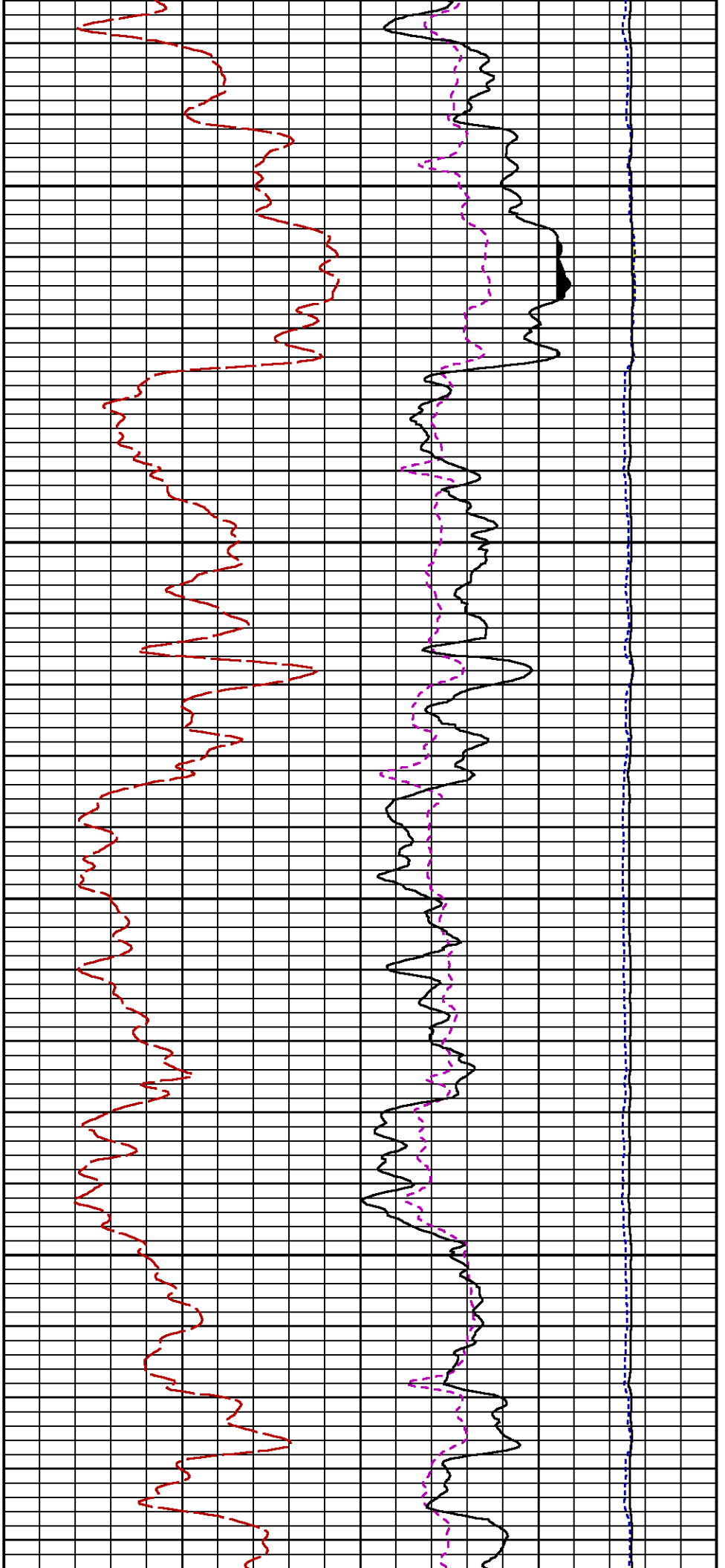
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation : SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/14-17E_RPM_GS.fvpdf [5"/100' Scale]
 Plot Interval : 2460 - 3070 Feet

Data File 1 : F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/17E_RPM_GS.xtf
 Created On : N/A
 Company : LARAMIE ENERGY LLC
 Well : GUNDERSON 0994-14-17E
 Field : VEGA
 File Interval : 2434.25 - 3104.5 Feet
 OCT : p354h

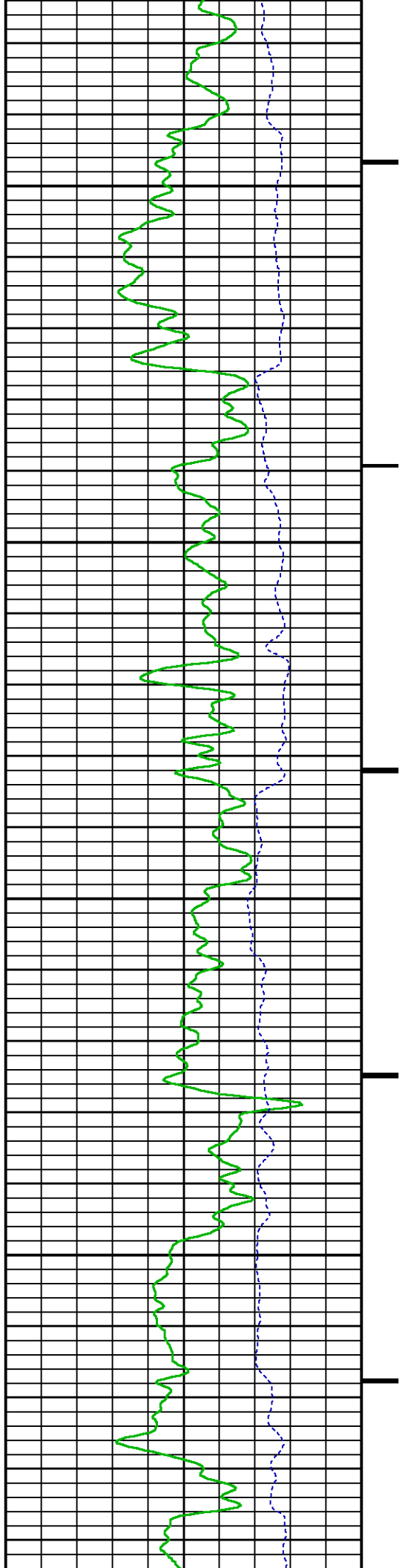


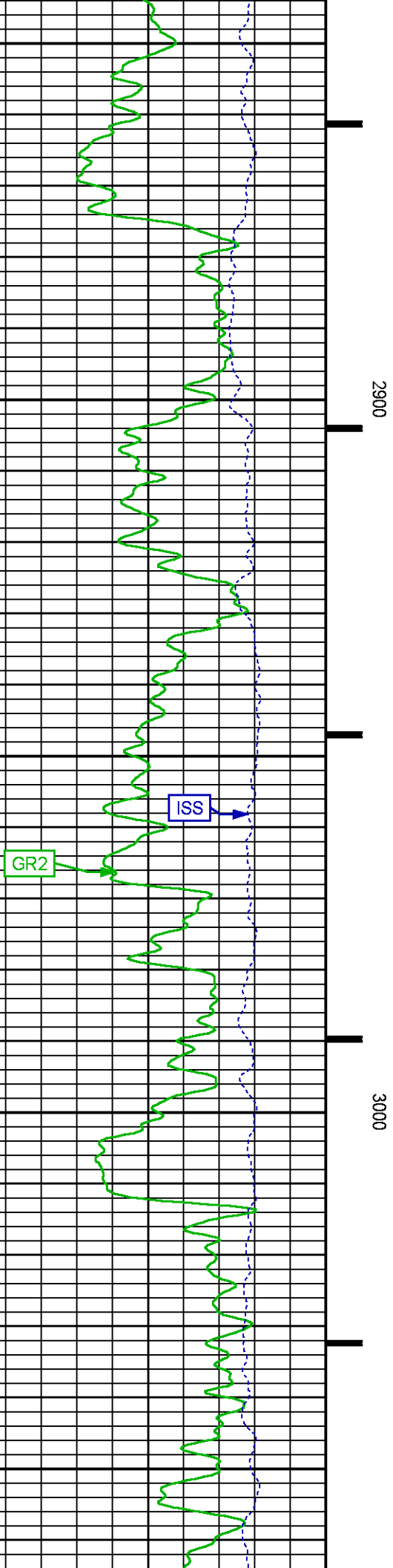
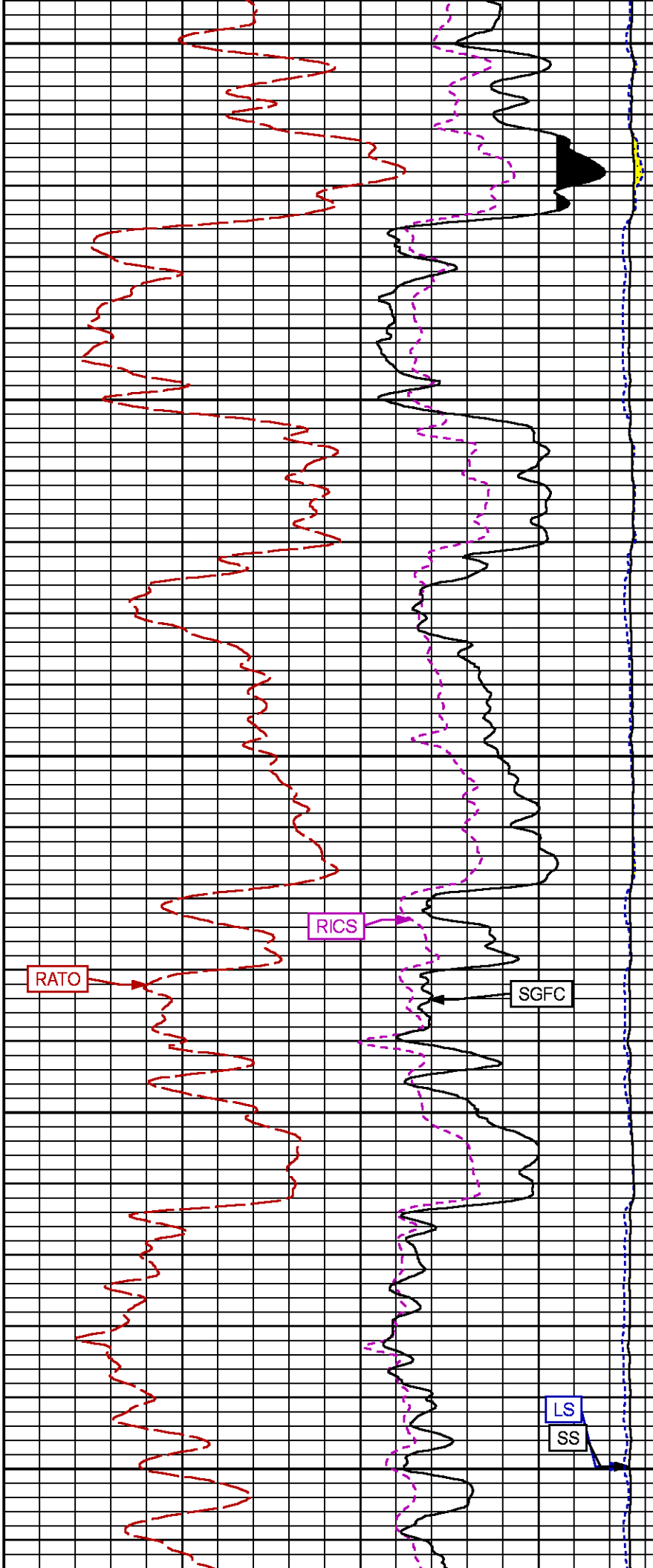


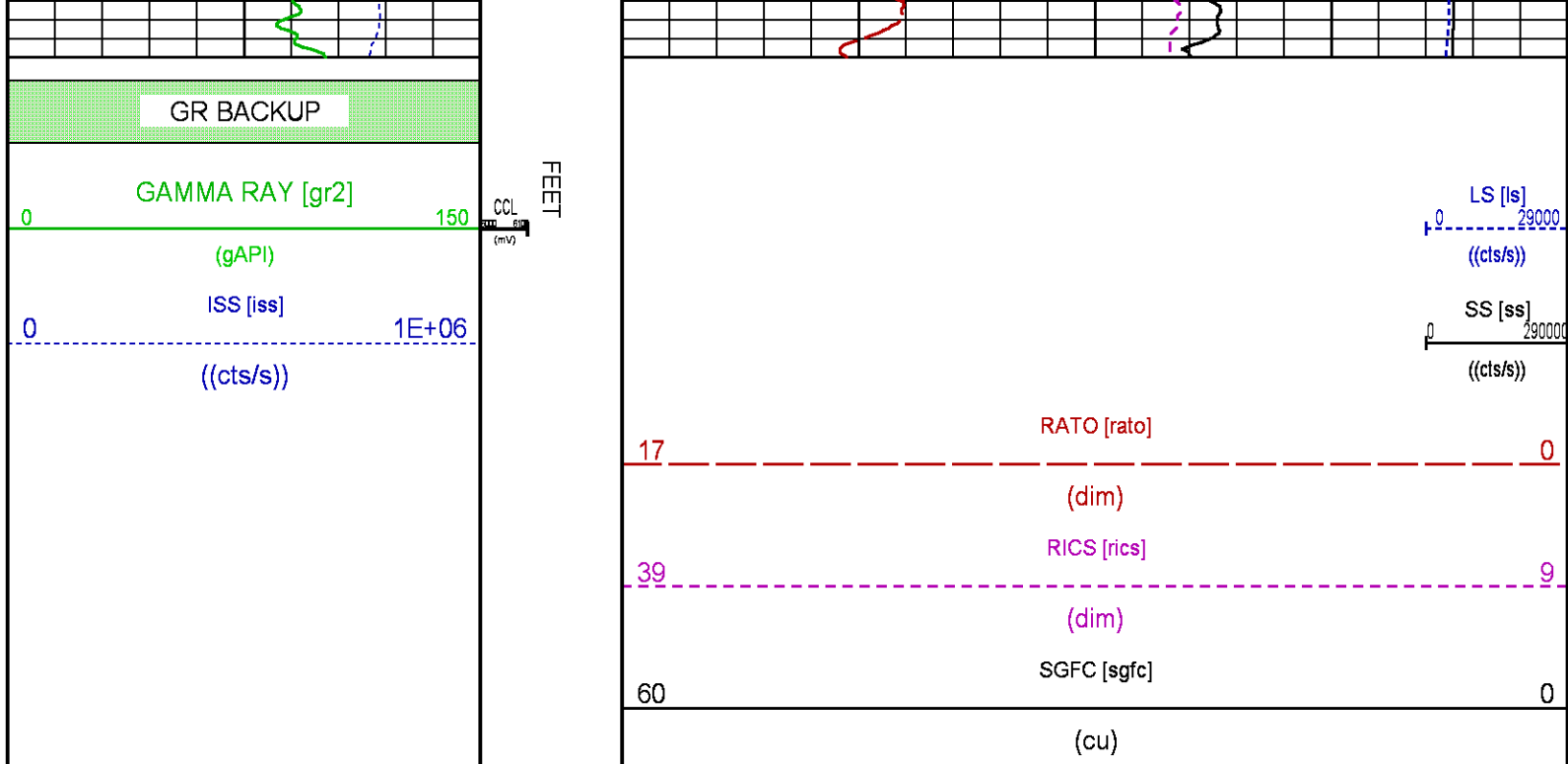


2700

2800







RPM MAIN PASS WILLIAMS FORK

ECLIPS 7.0i ECLIPS General Release Rel 7.0i Thu Jun 08 20:36:10 CDT 2017
Patches: 4

Plotted: Thu Jun 21 15:30:50 2018

PARAMETER AND FILTER SUMMARY REPORT

FILE: /dat1a/LARAMIE_GUNDERSON_0994-14-17E/p354h02.prm
LOGGING MODE: DEPTH DIRECTION: UP
TOP DEPTH: 4909.000 ft BOTTOM DEPTH: 8182.307 ft

SYMMETRIC FILTER

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
GR	FILTER ()	medium (1)		TOP BOTTOM

RPM PROCESSING

MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP BOTTOM
	OPEN/CASED HOLE	CASED HOLE		" "
	BOREHOLE SIZE	7.88	in	" "
	LARGEST CASING OD	4.50	in	" "
	MATRIX	SANDSTONE		" "

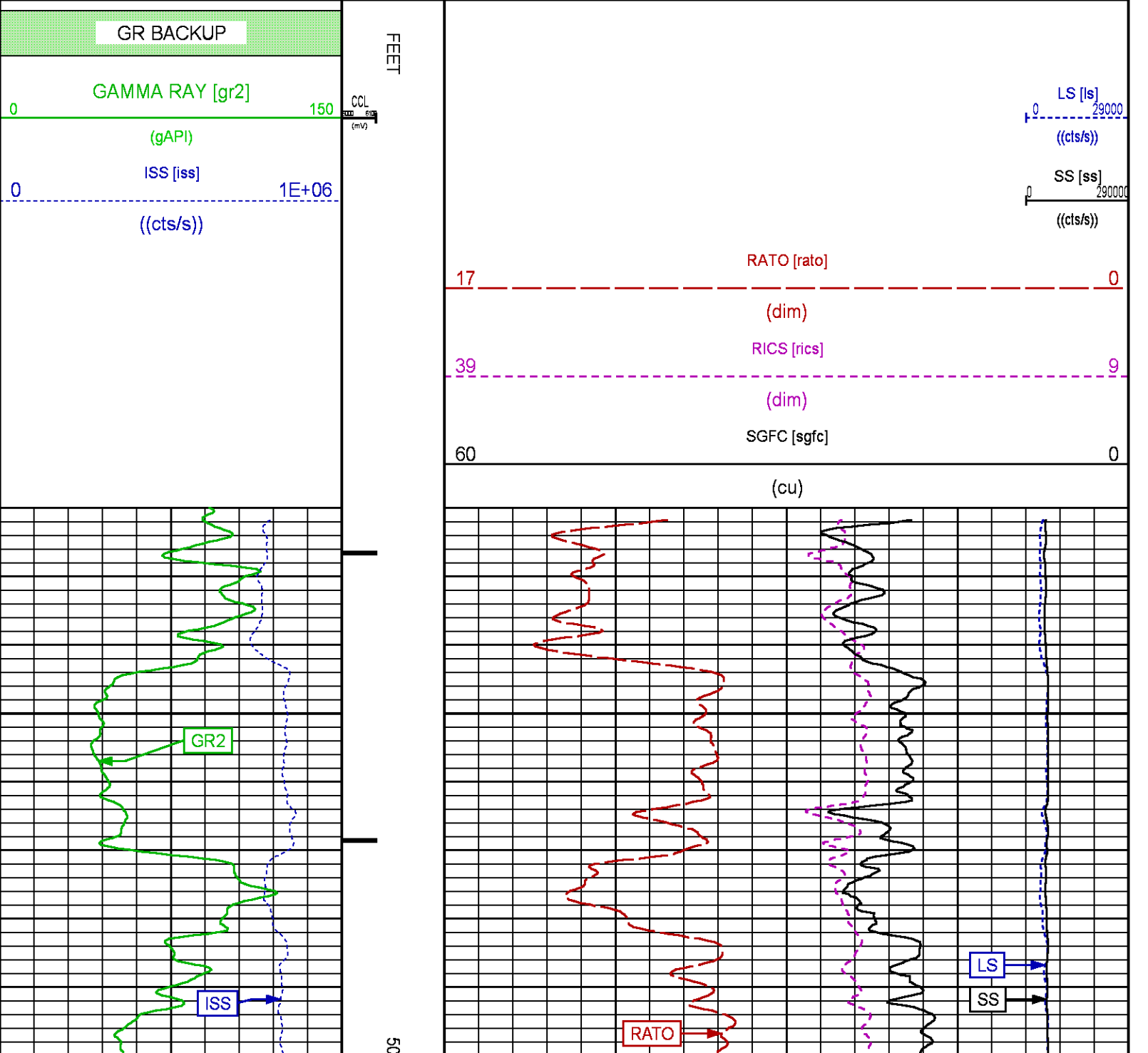
CURVE DESCRIPTION REPORT

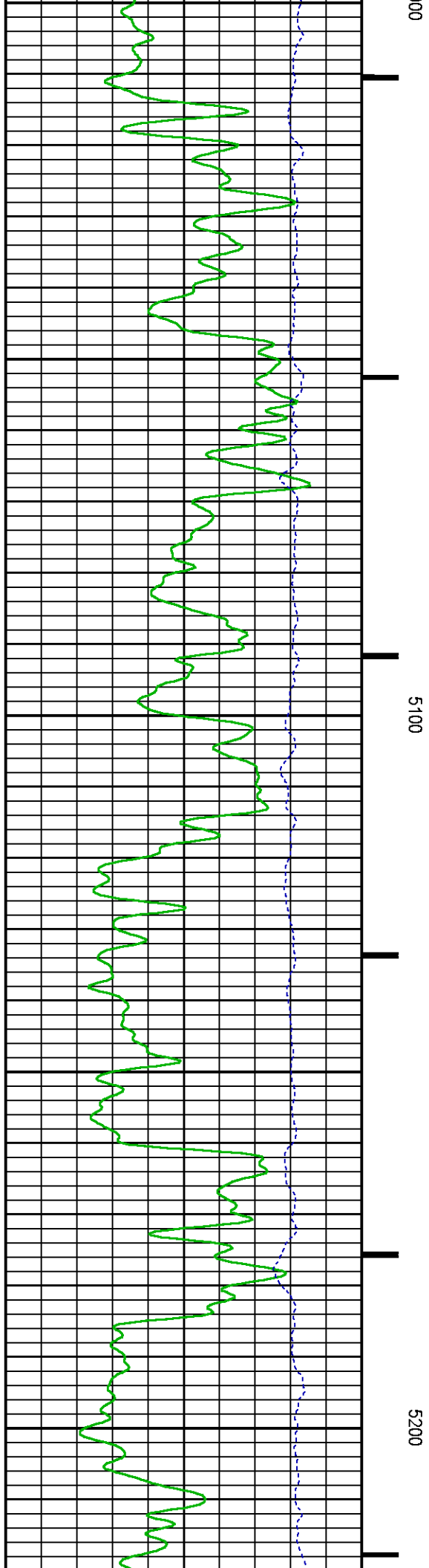
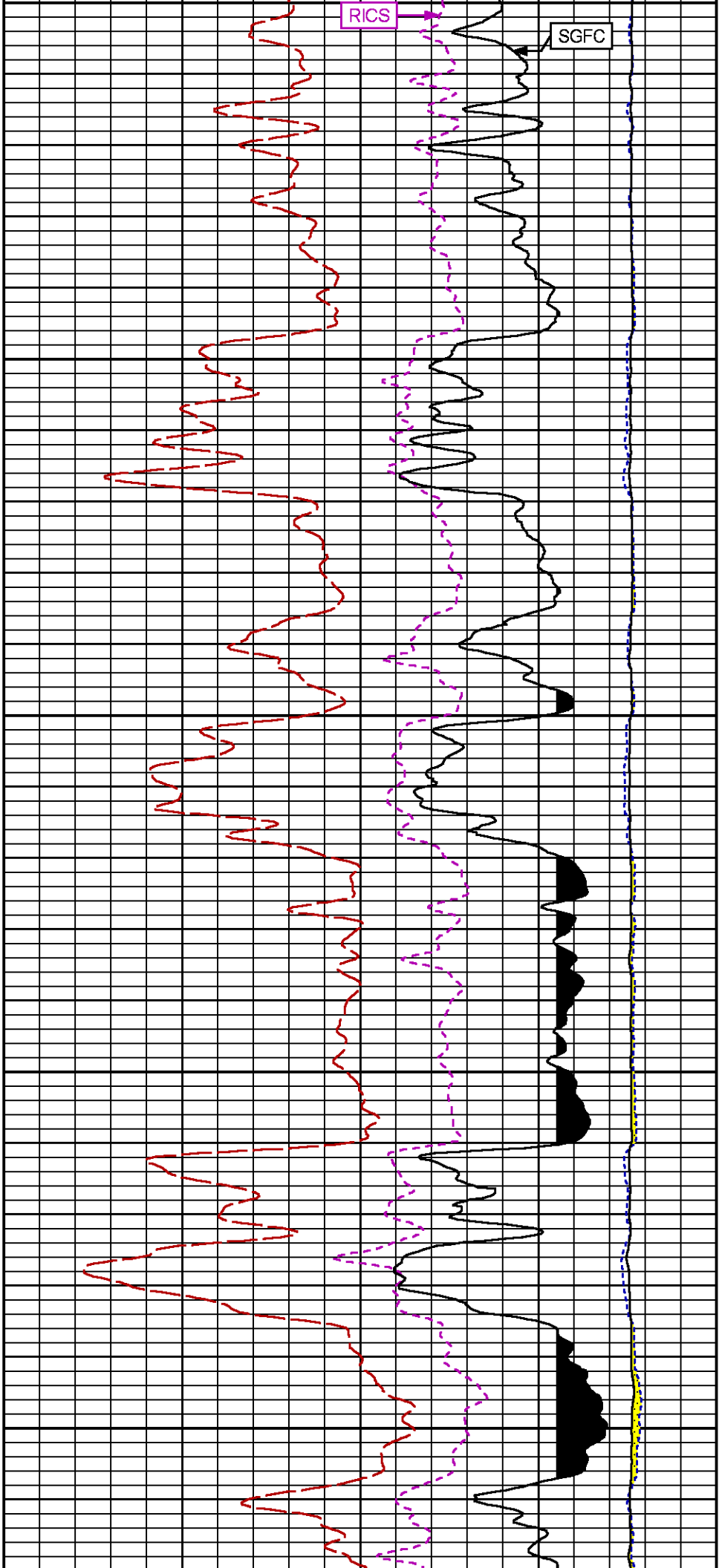
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO

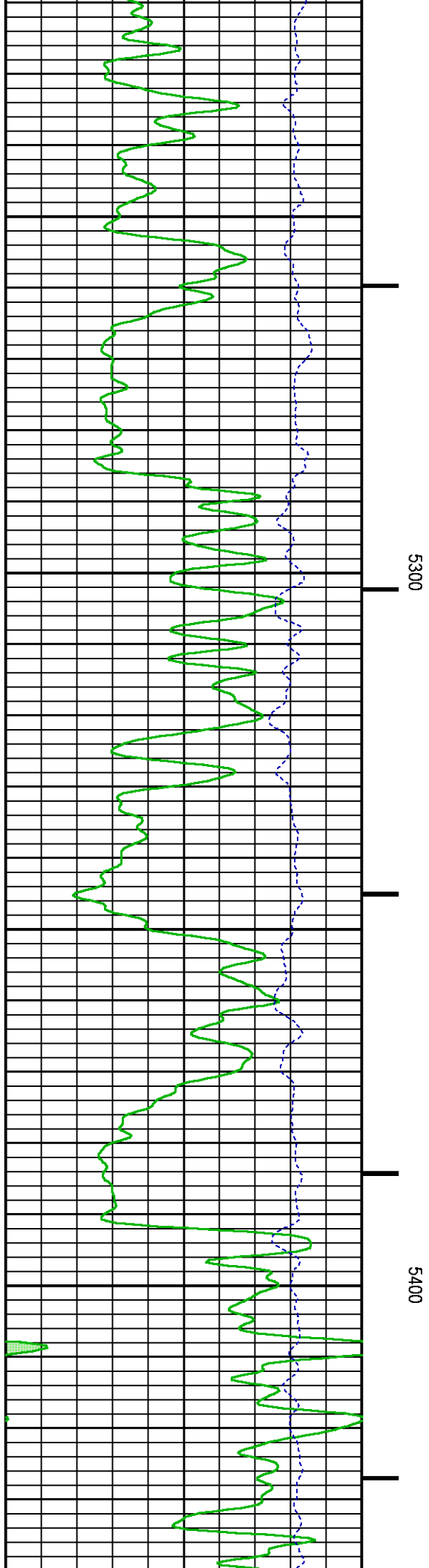
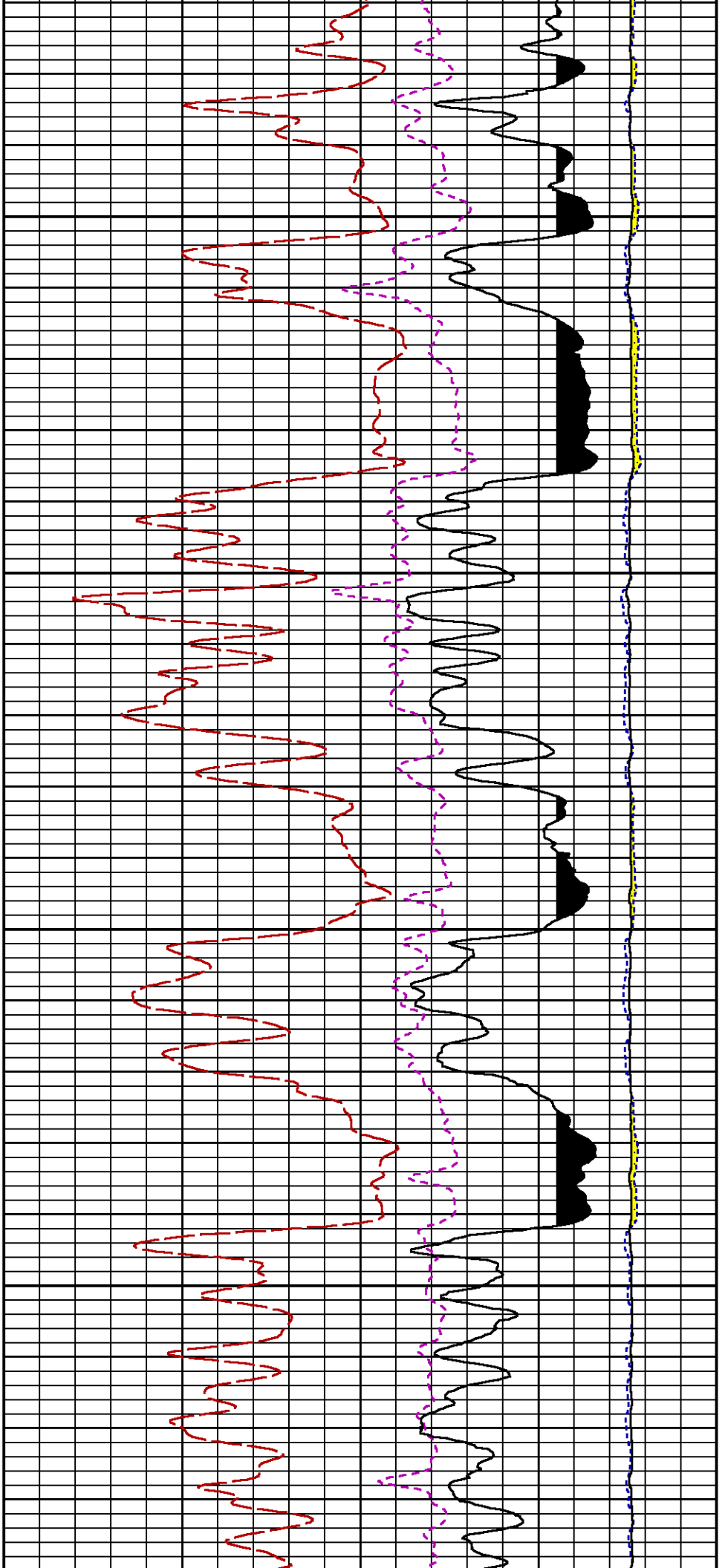
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

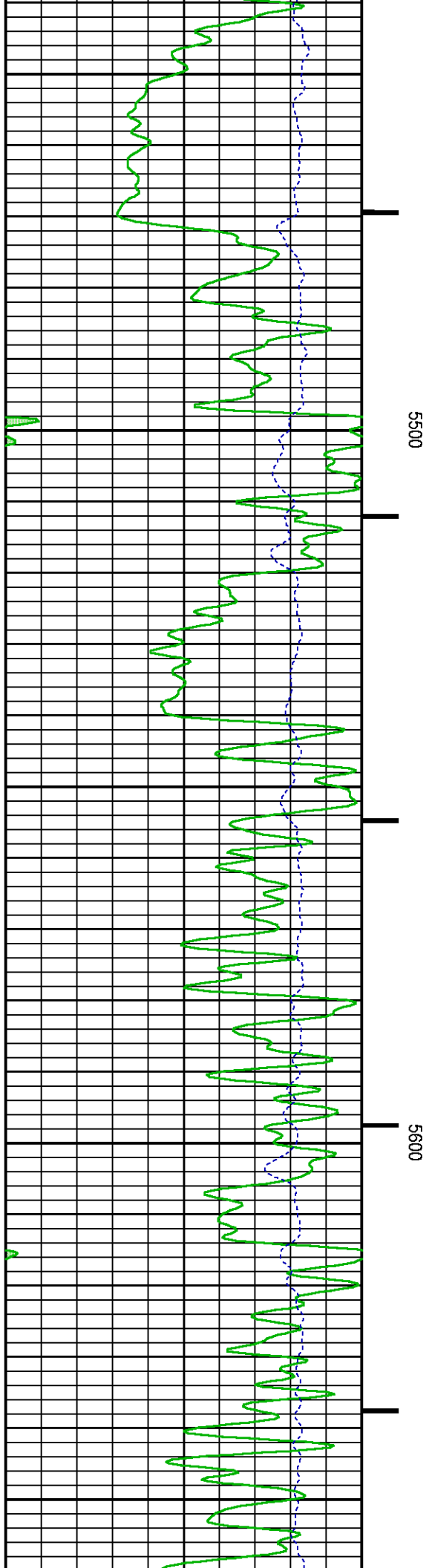
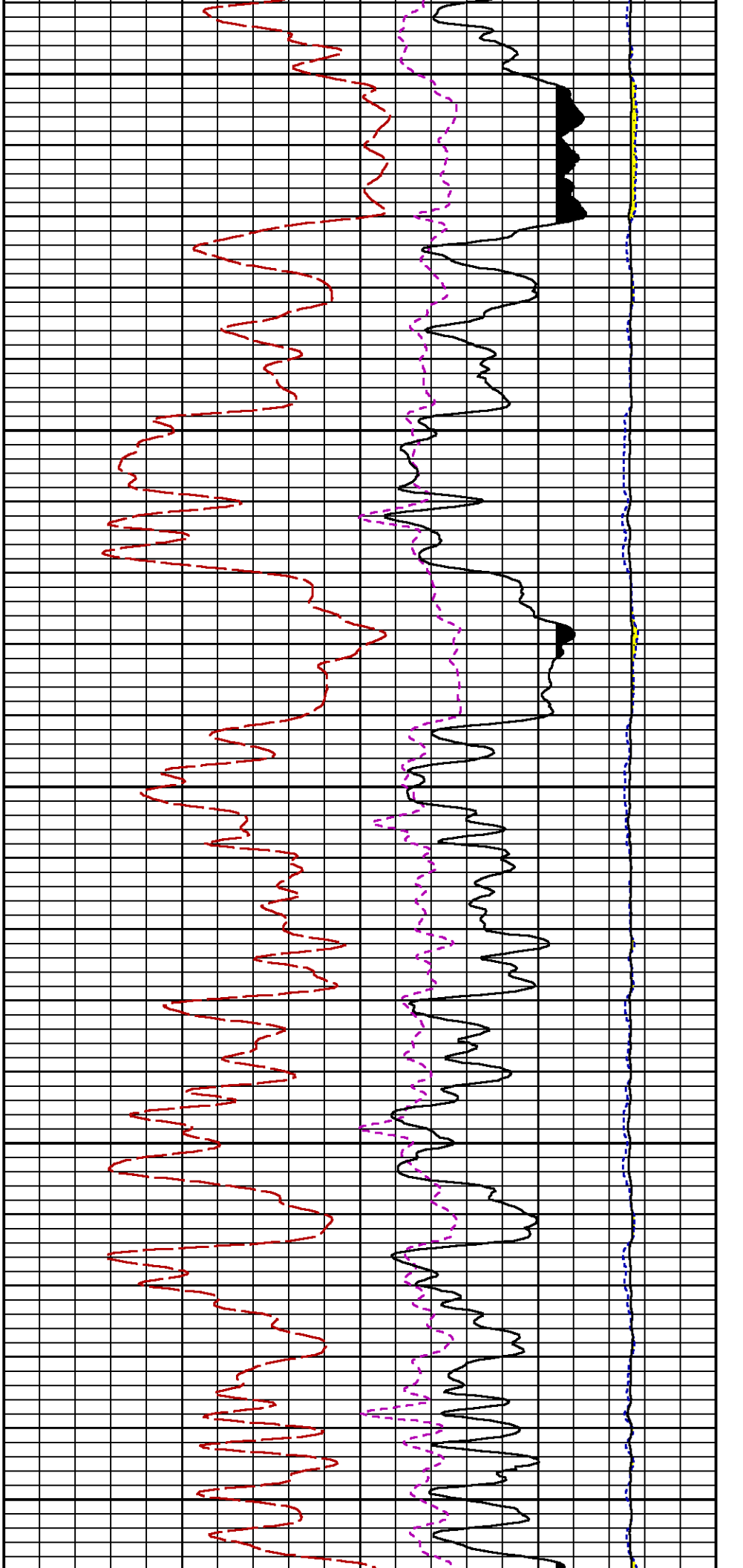
CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

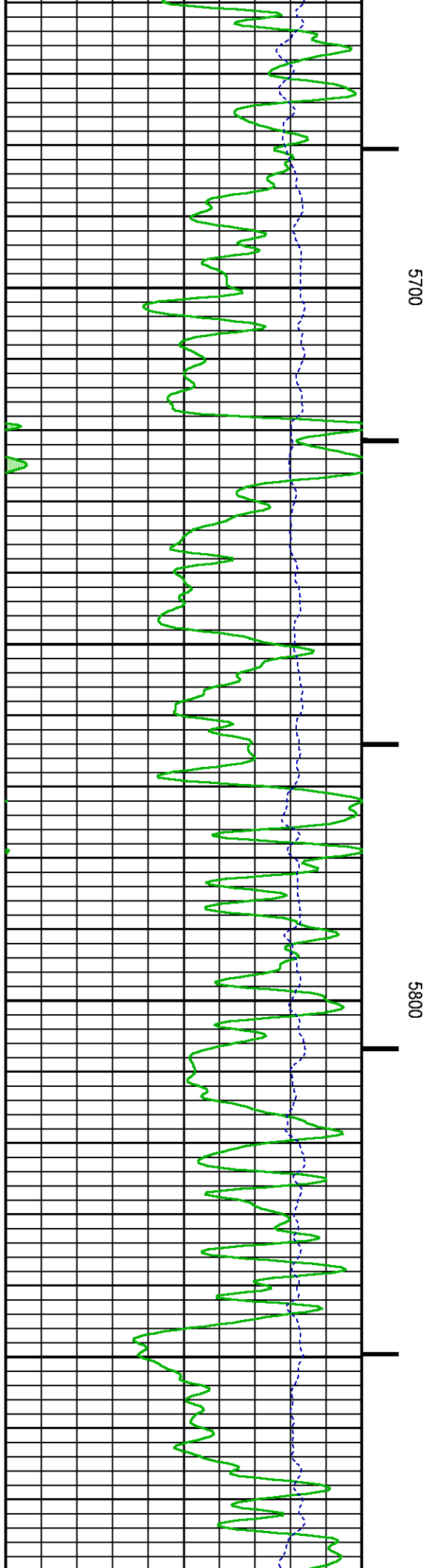
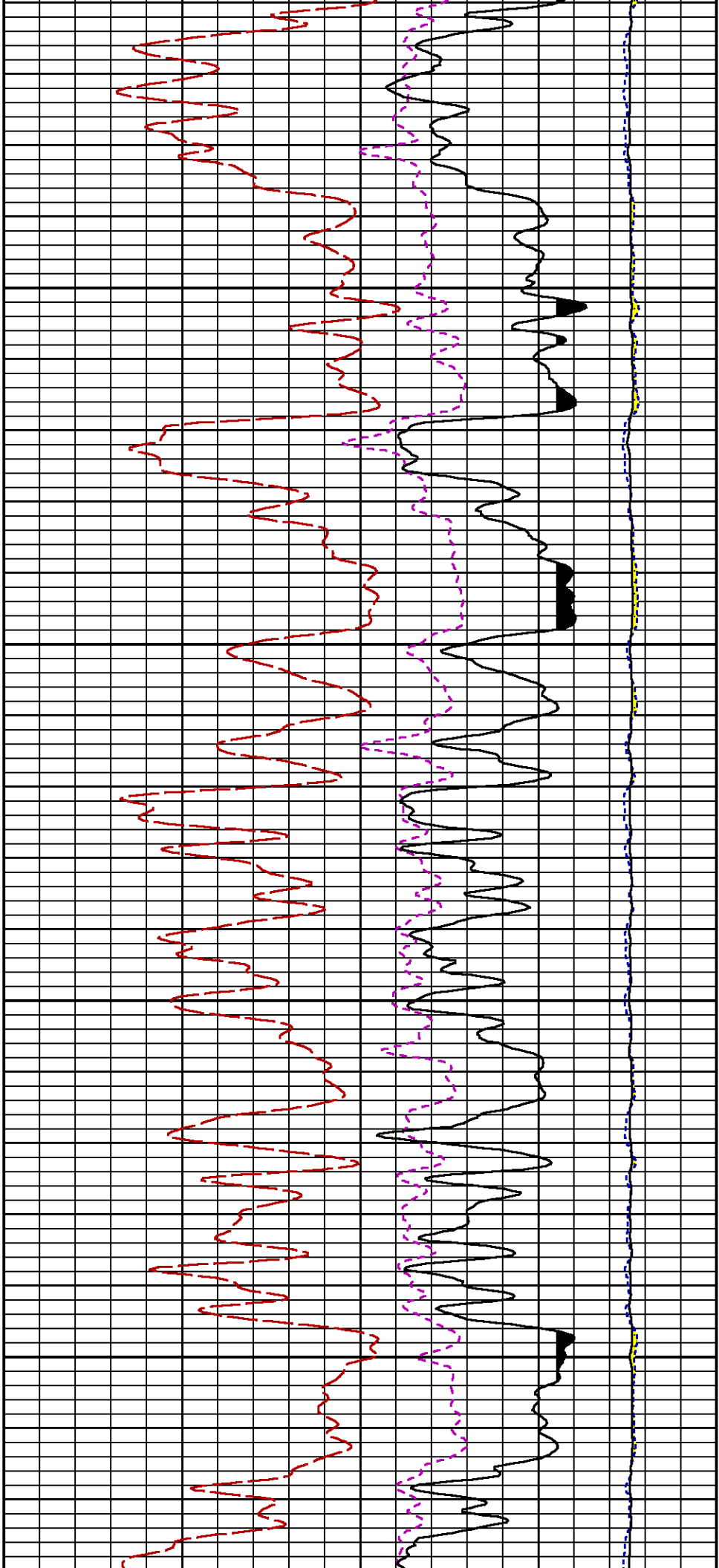
Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/14-17E_RPM_WF.fvpdf [5"/100" Scale]
Plot Interval	: 4920 - 8195 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/17E_RPM_WF.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994-14-17E
Field	: VEGA
File Interval	: 4896 - 8187.25 Feet
OCT	: p354h

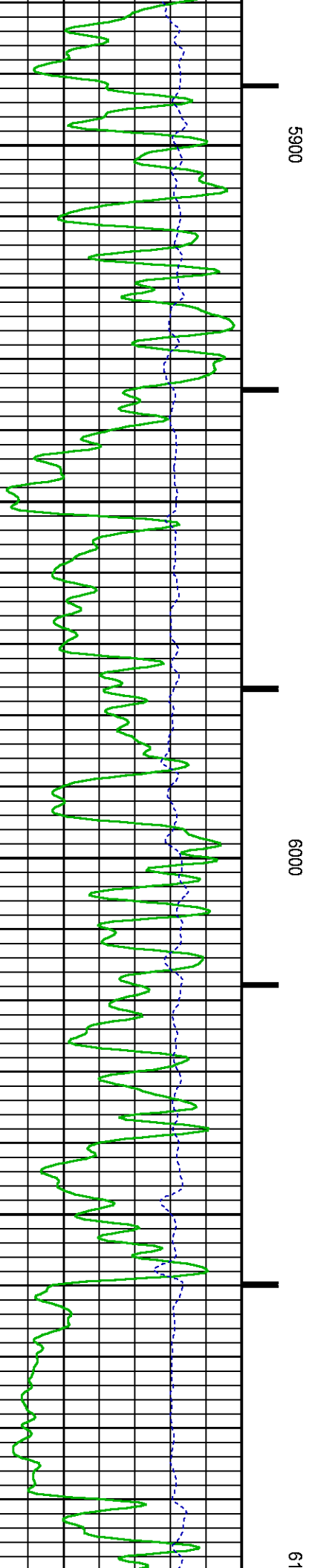
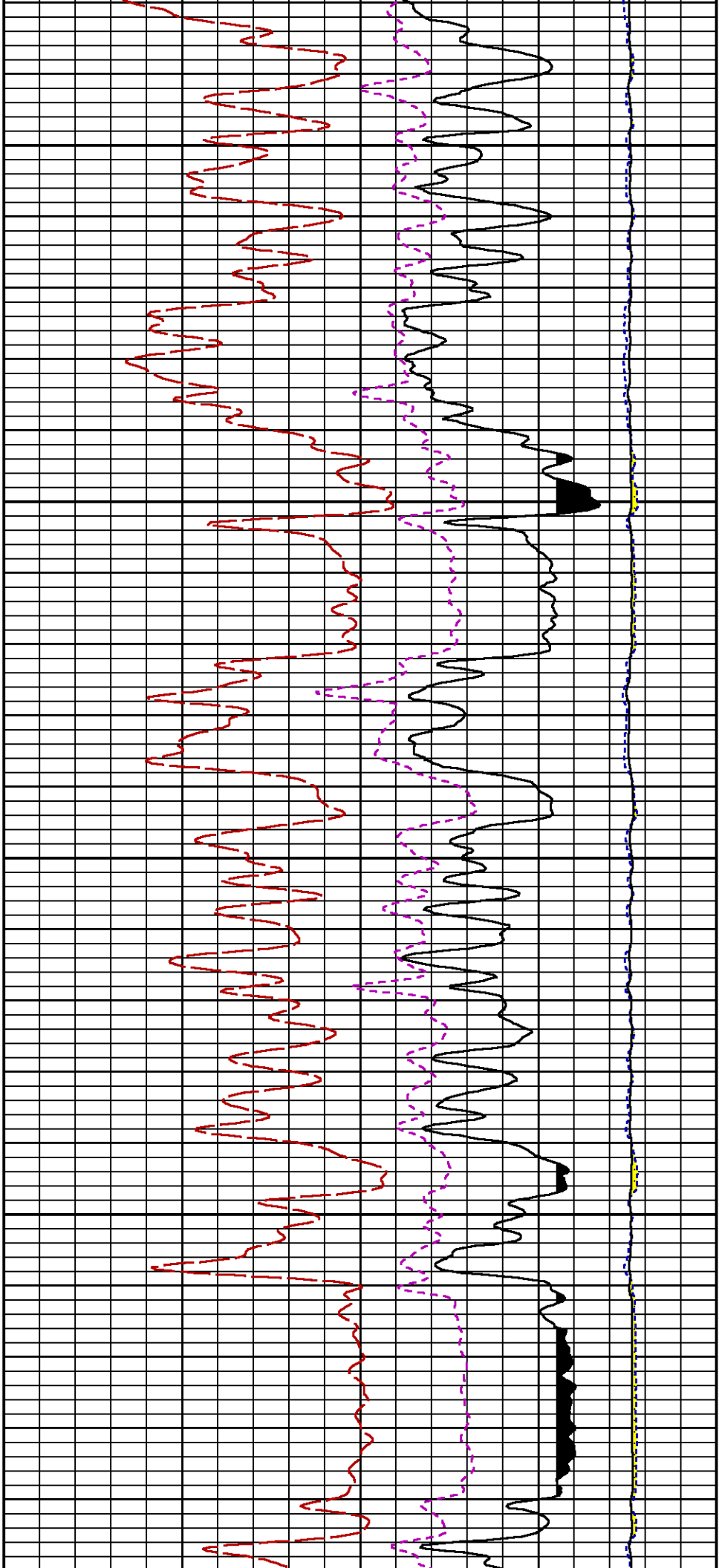


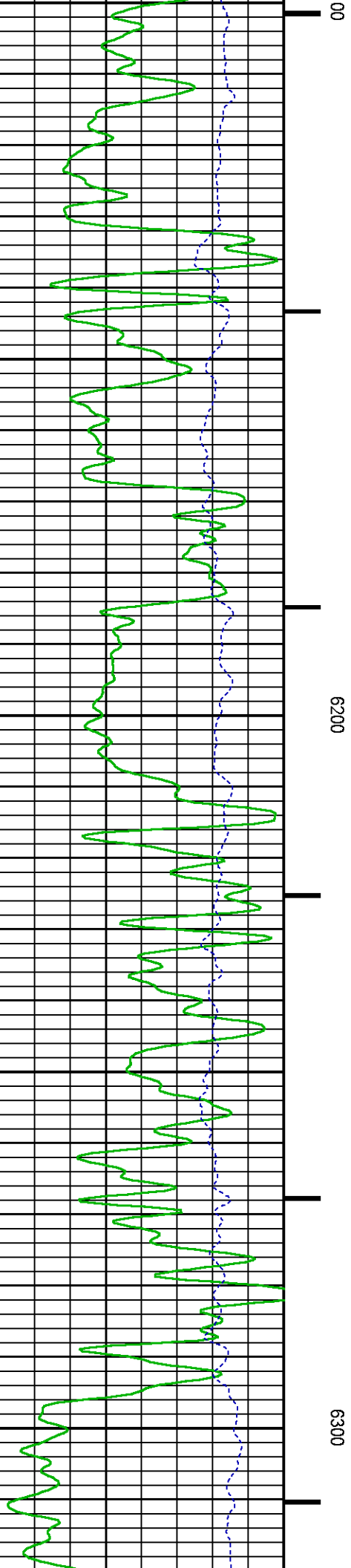
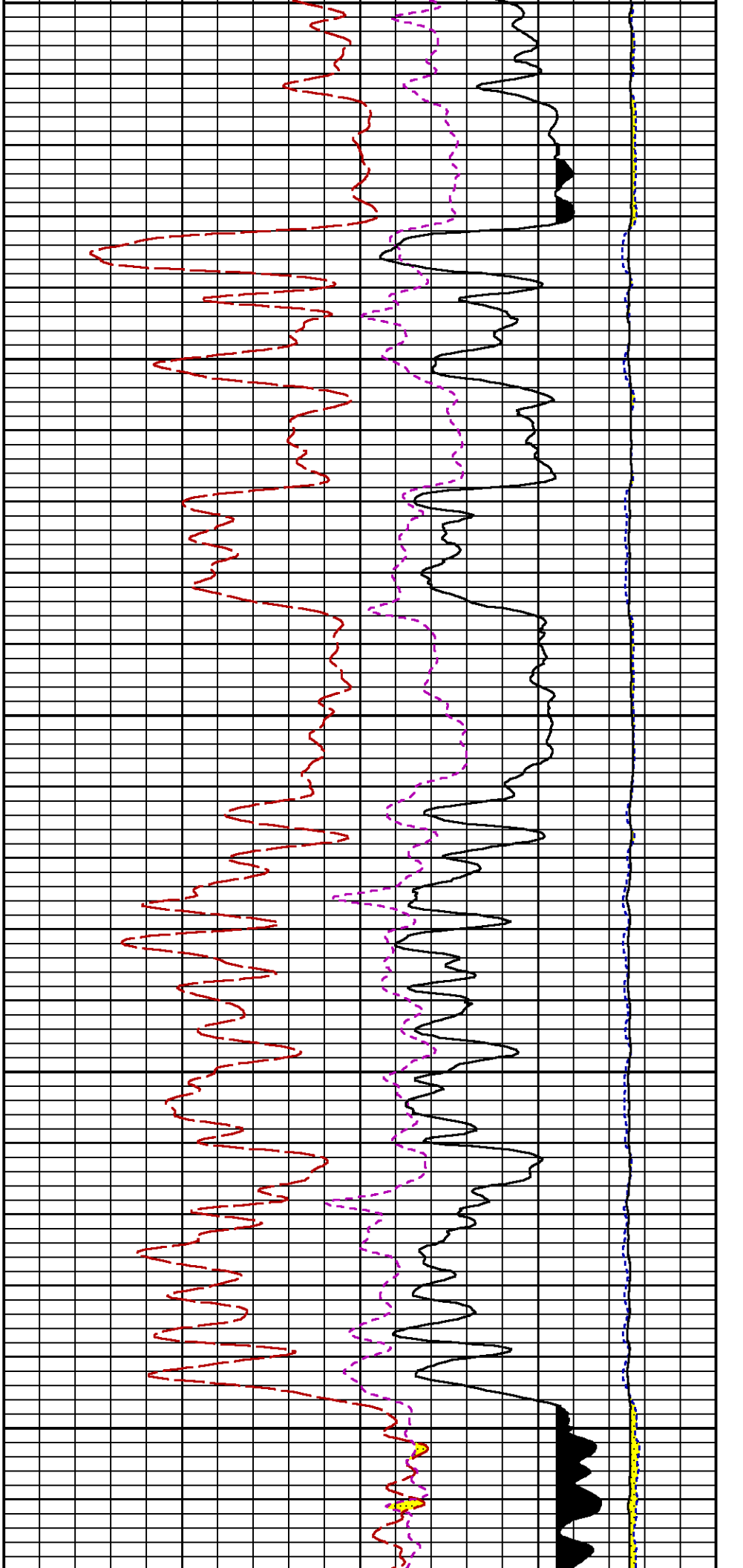


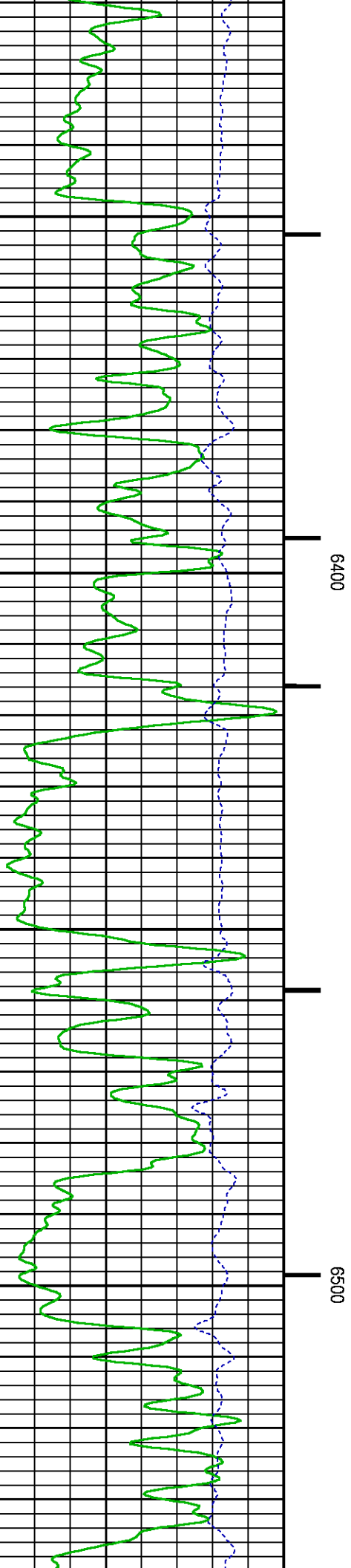
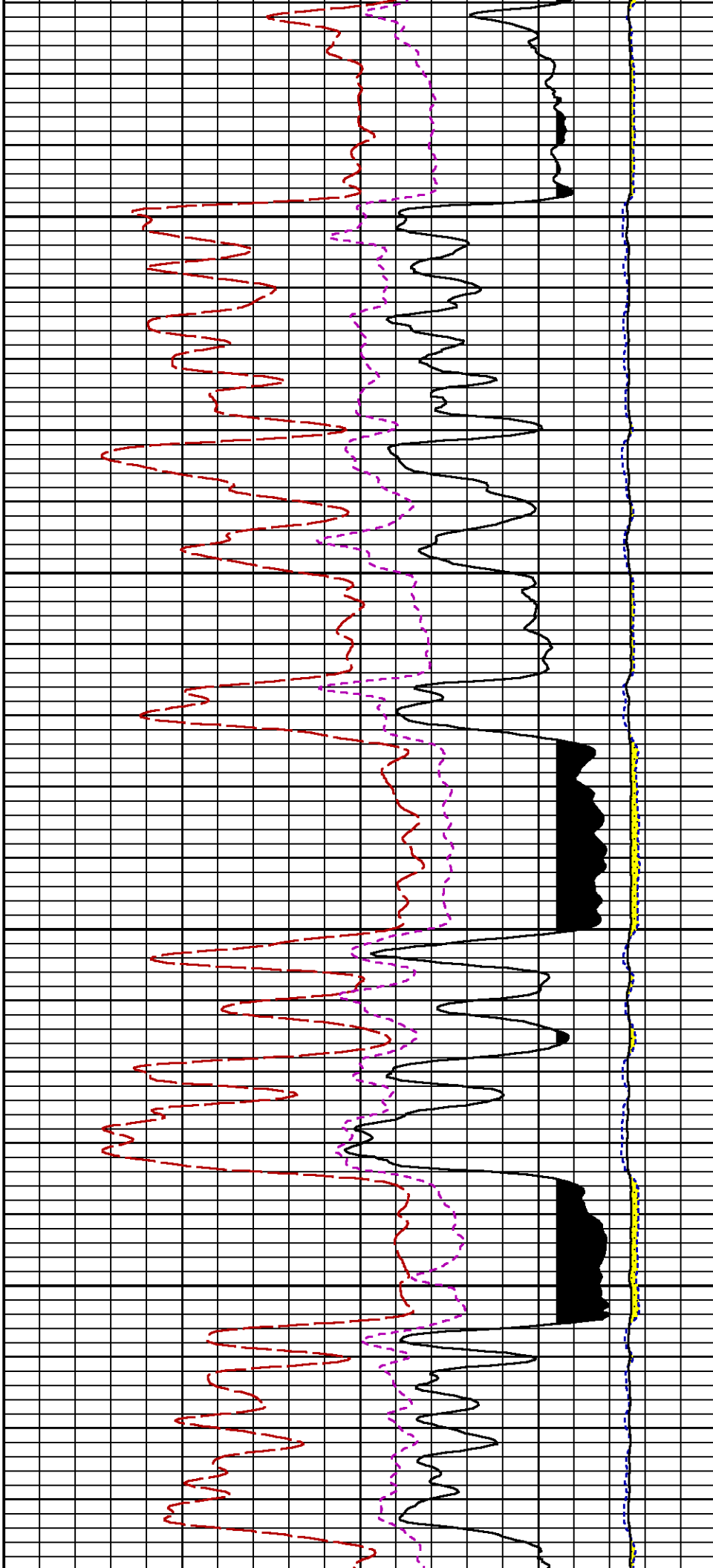


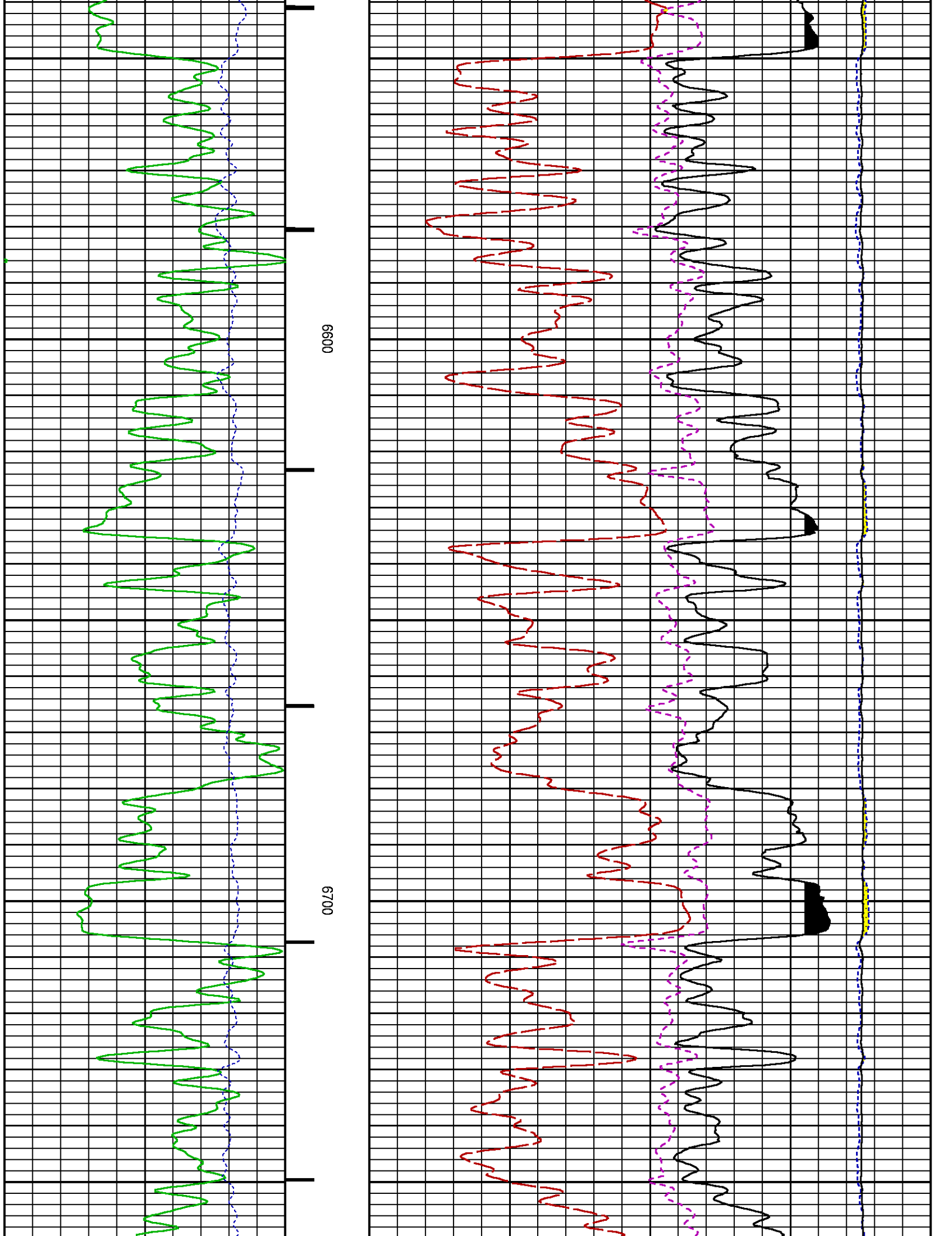


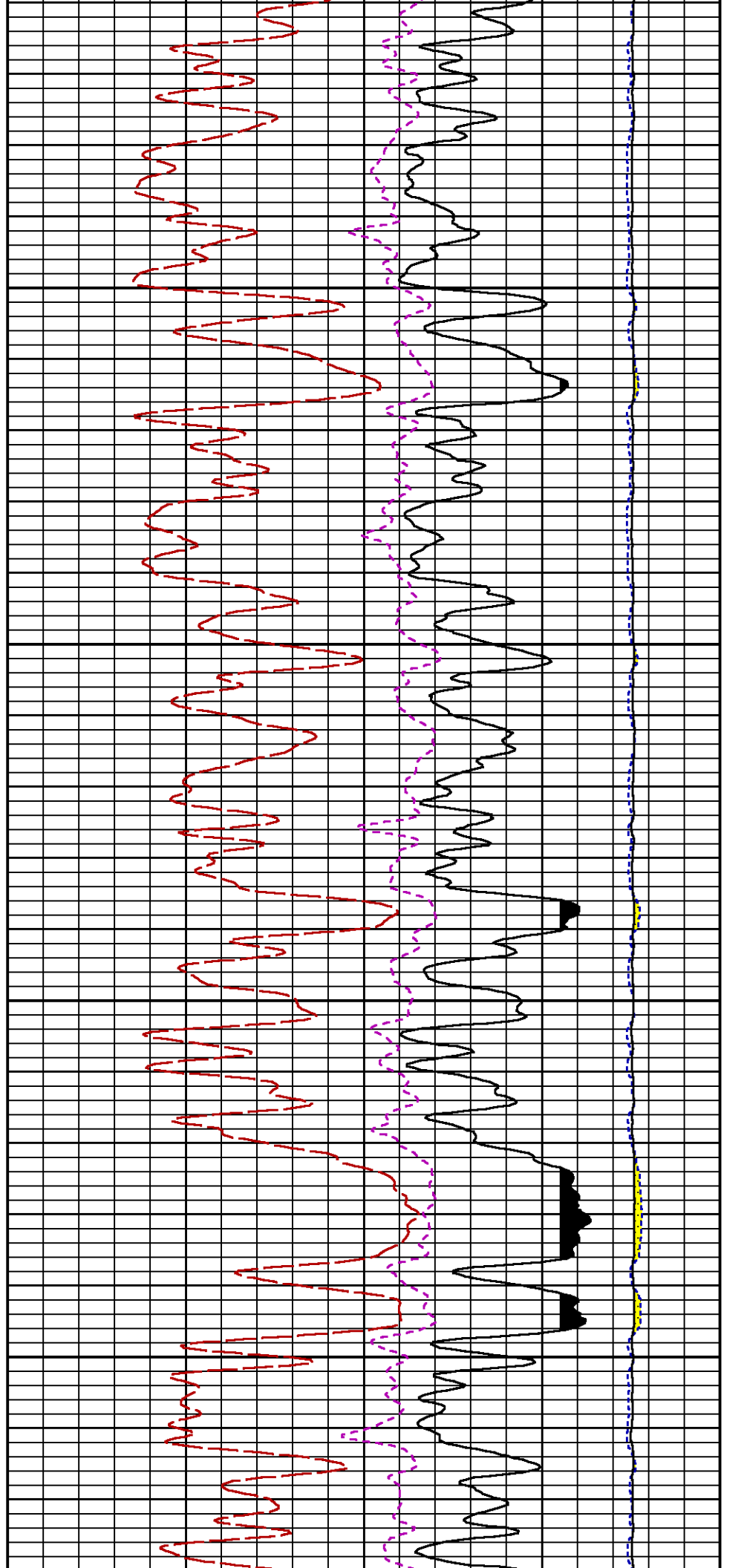
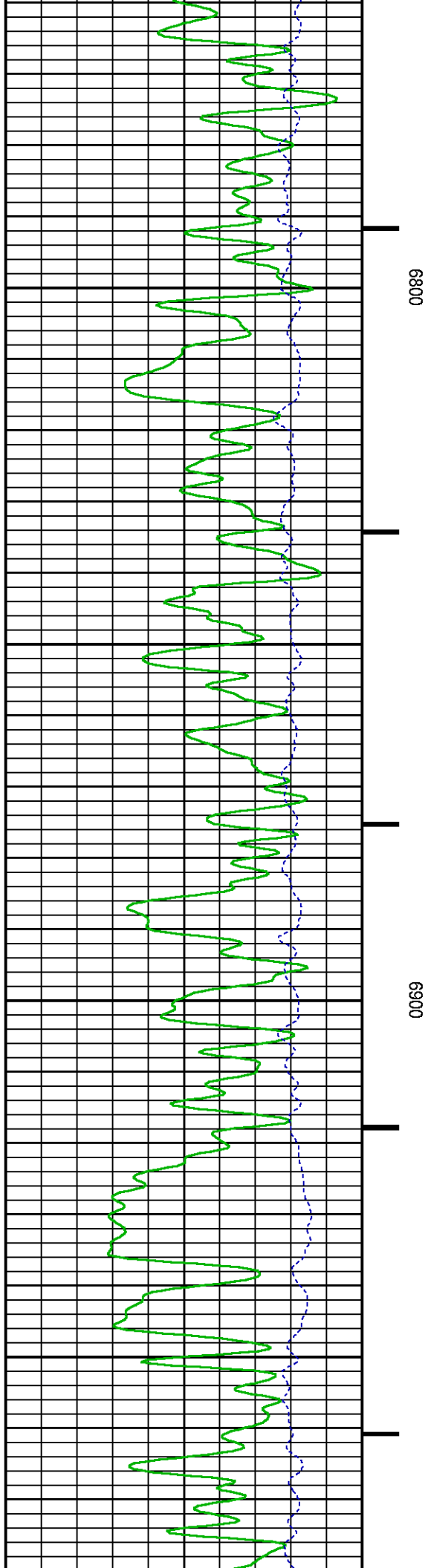


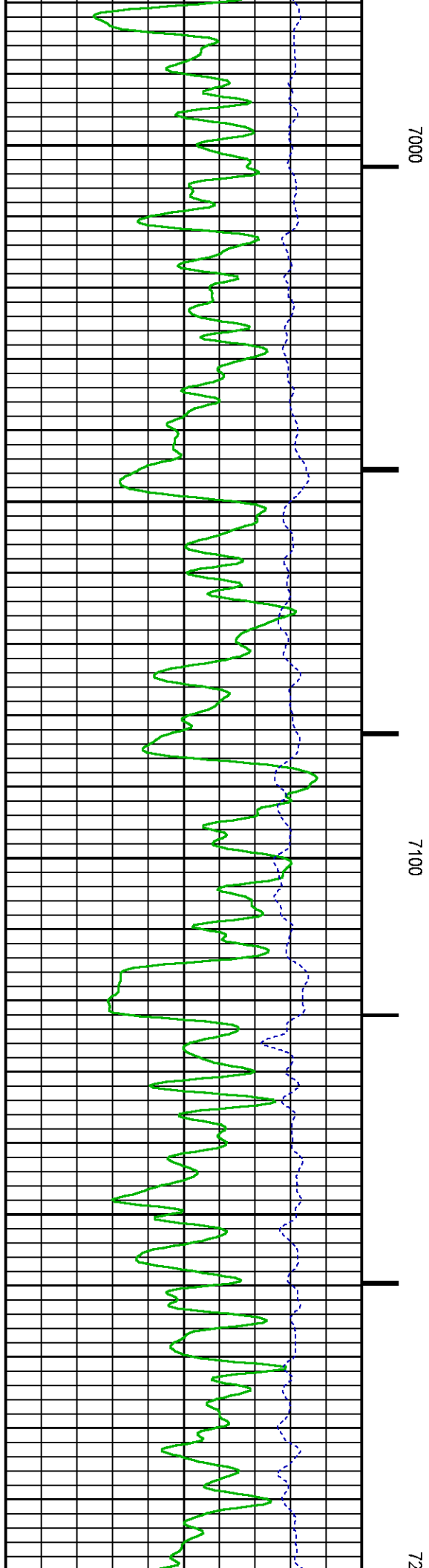
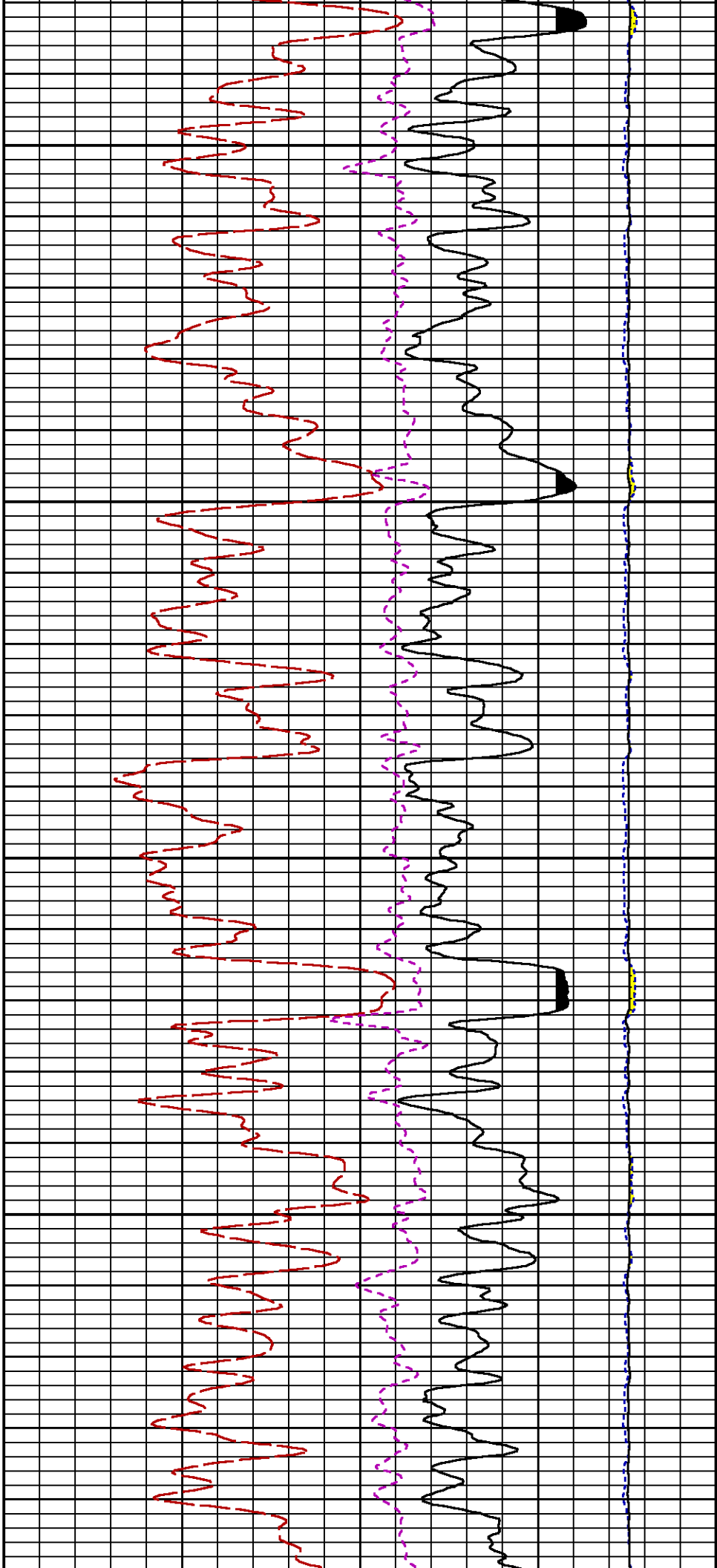


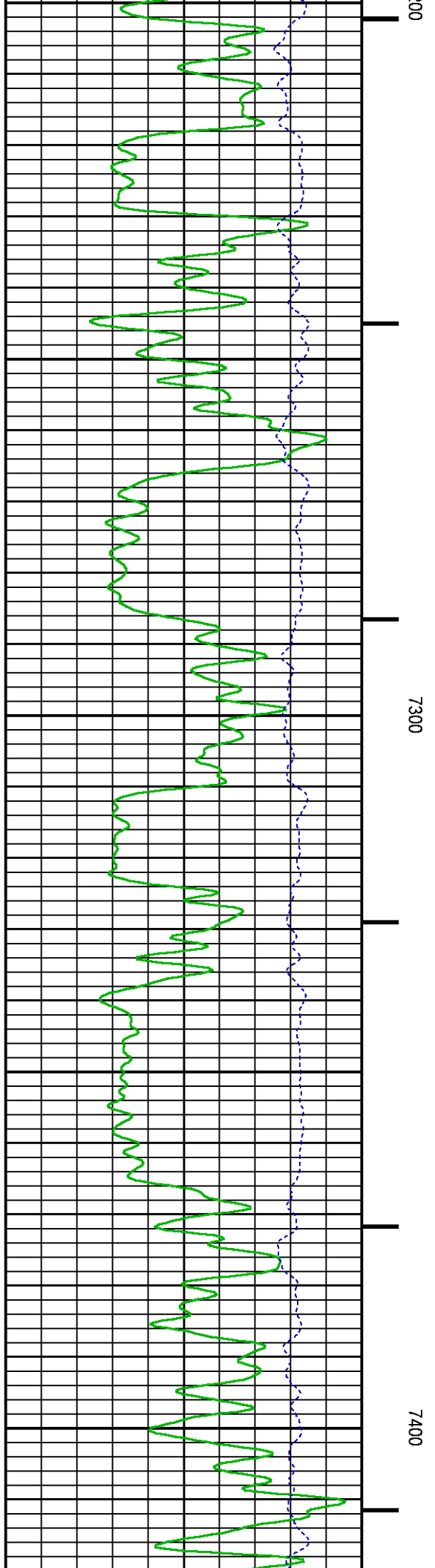
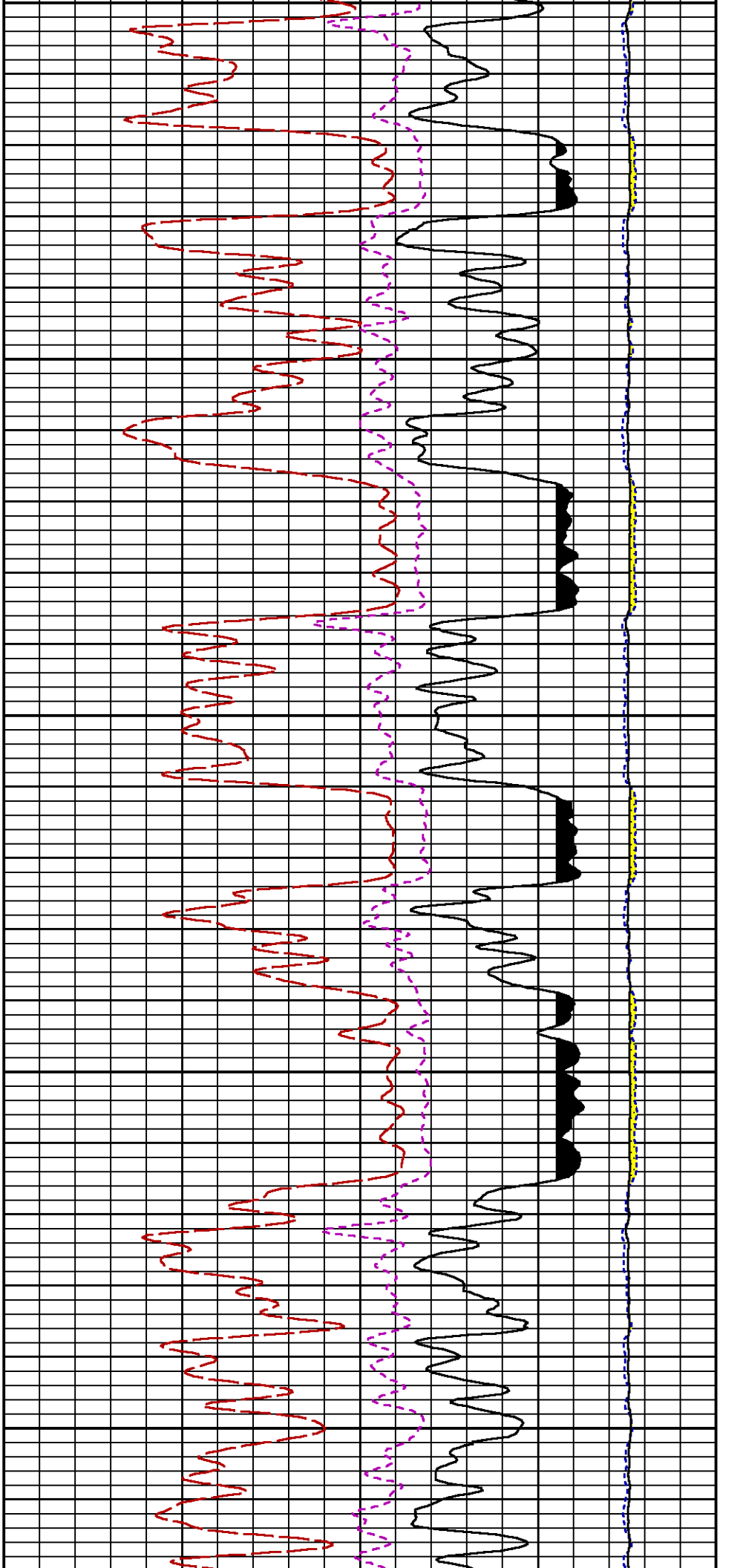


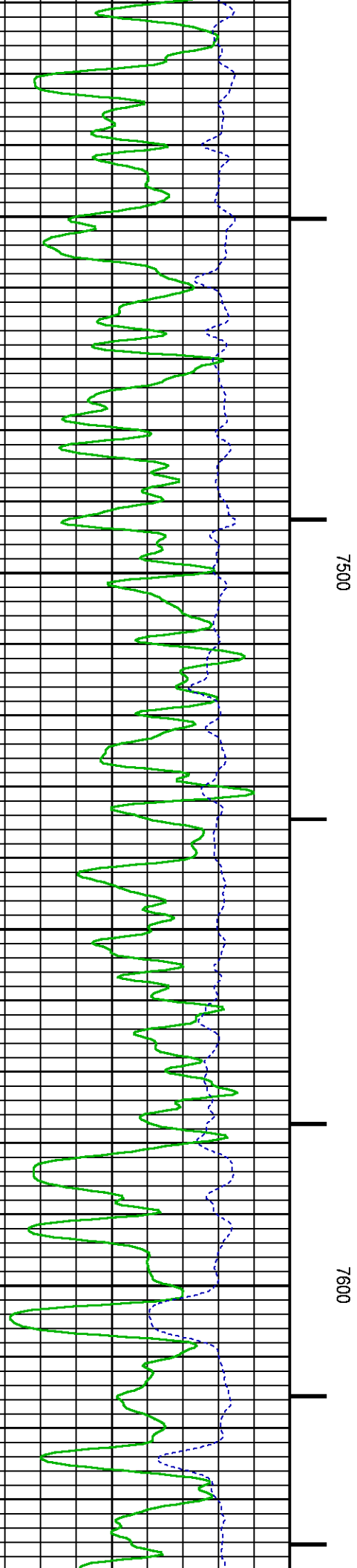
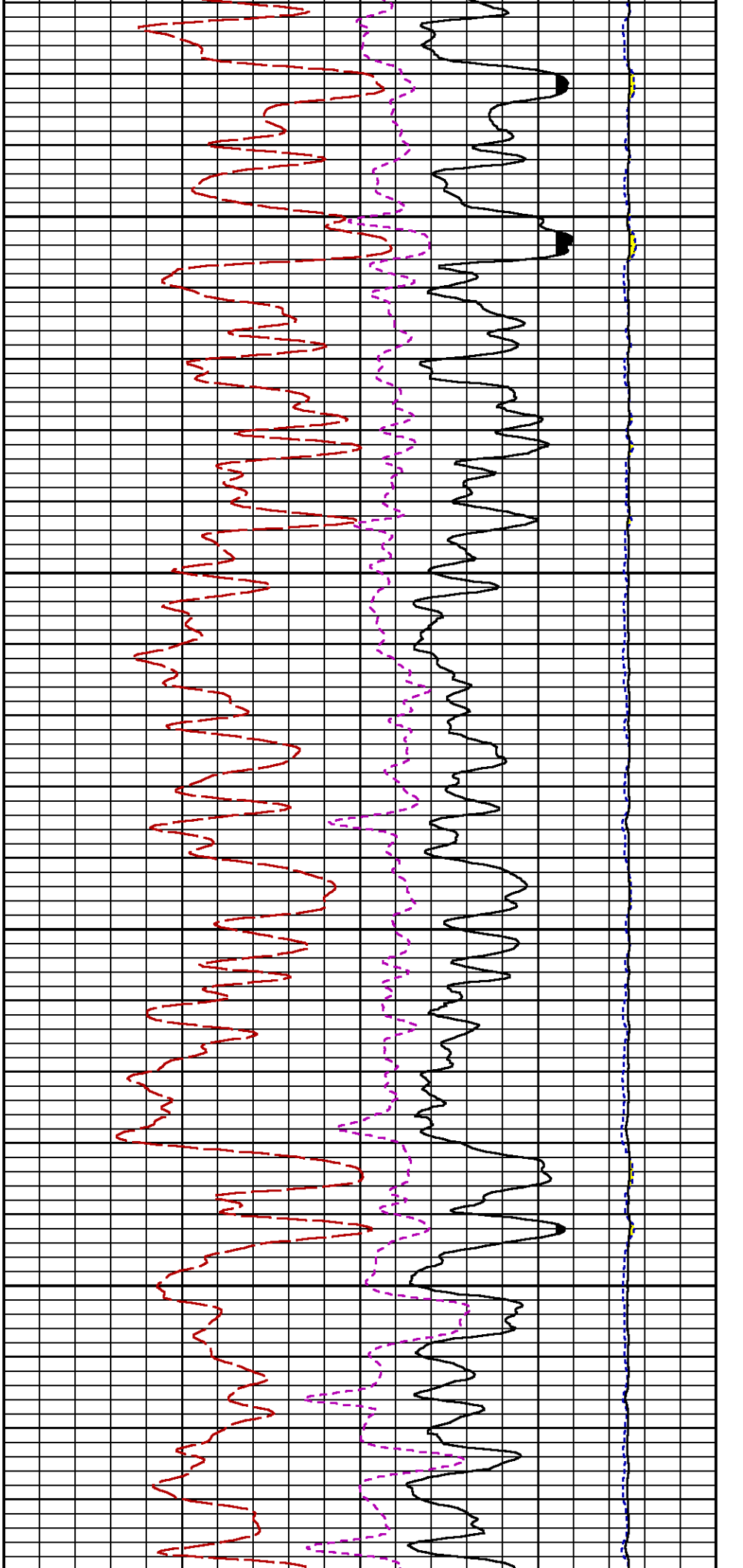


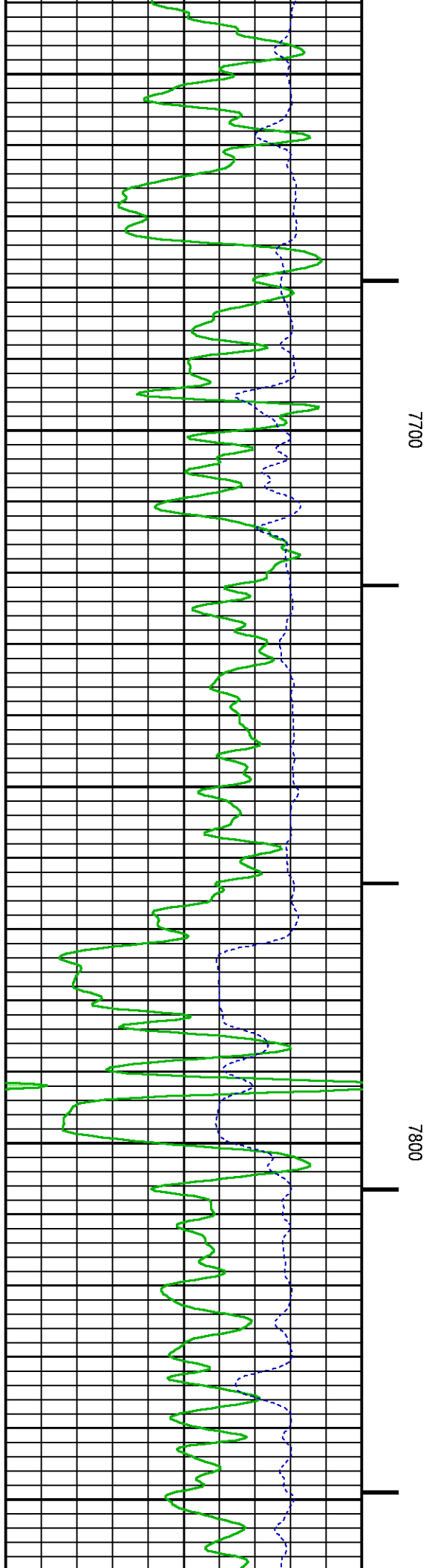
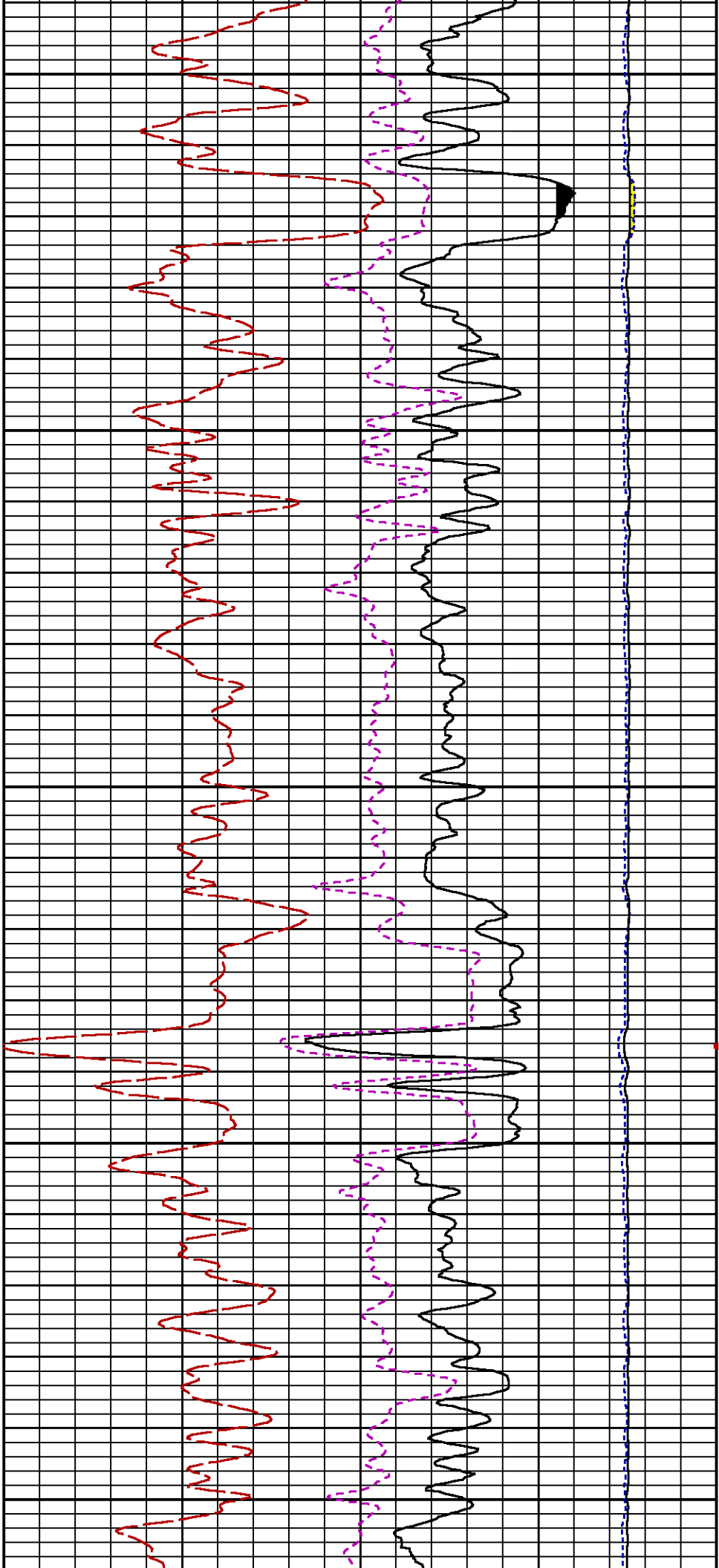


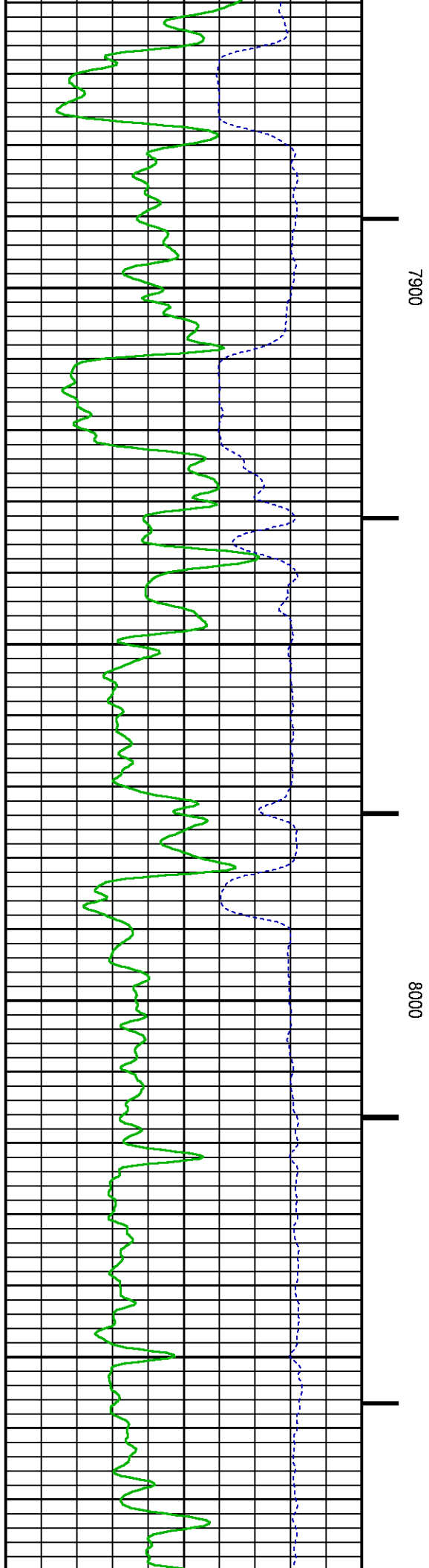
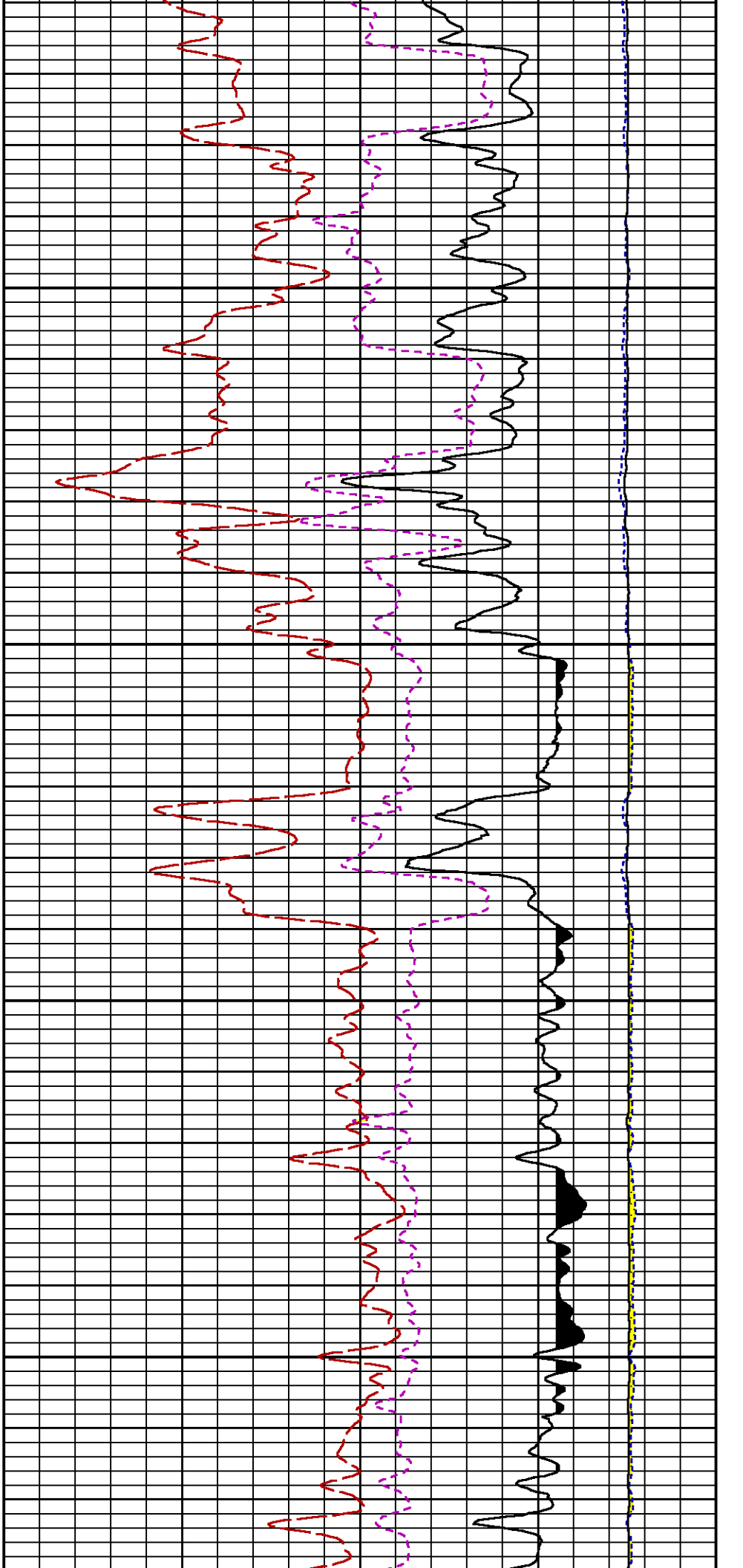


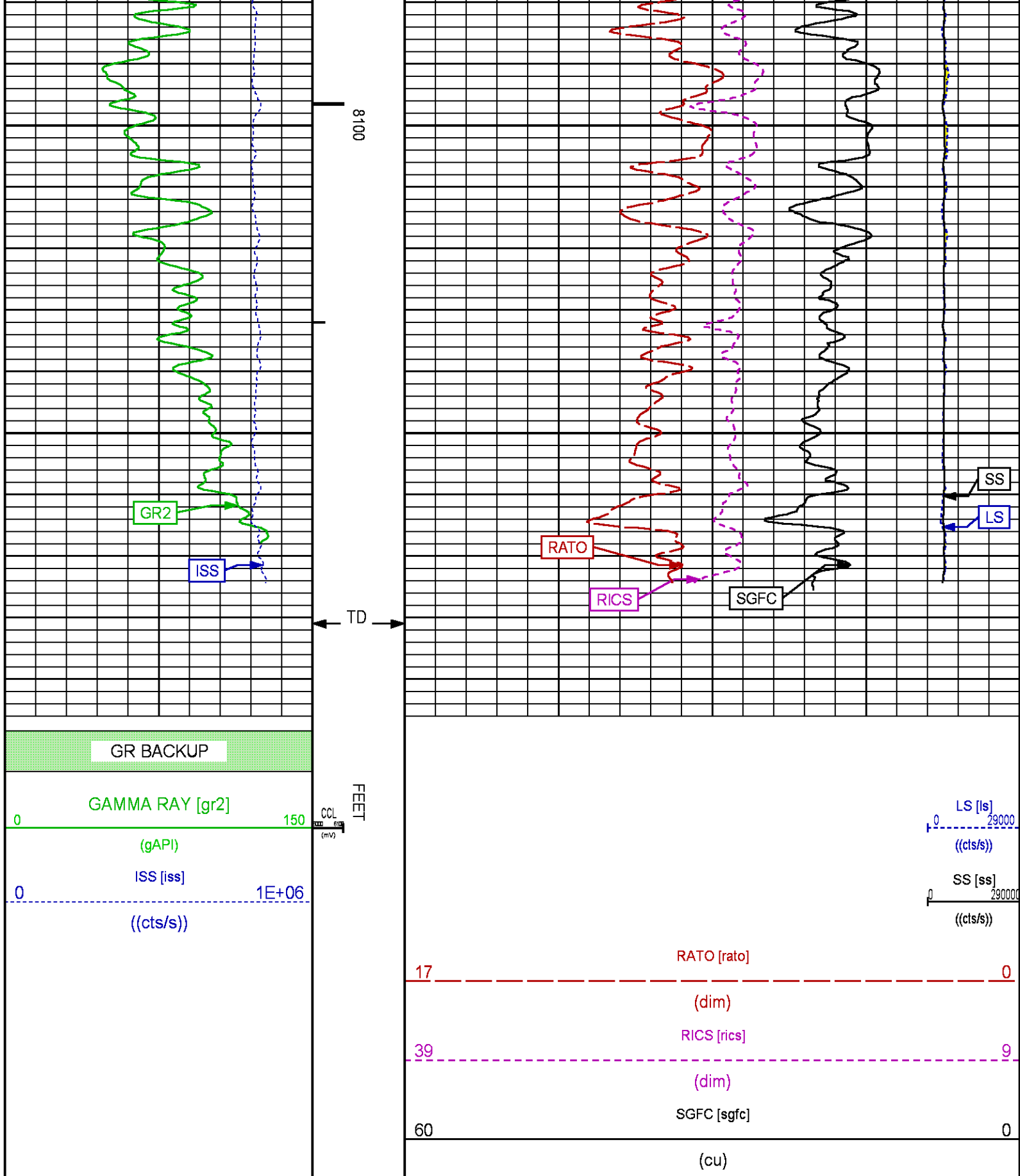












REPEAT PASS

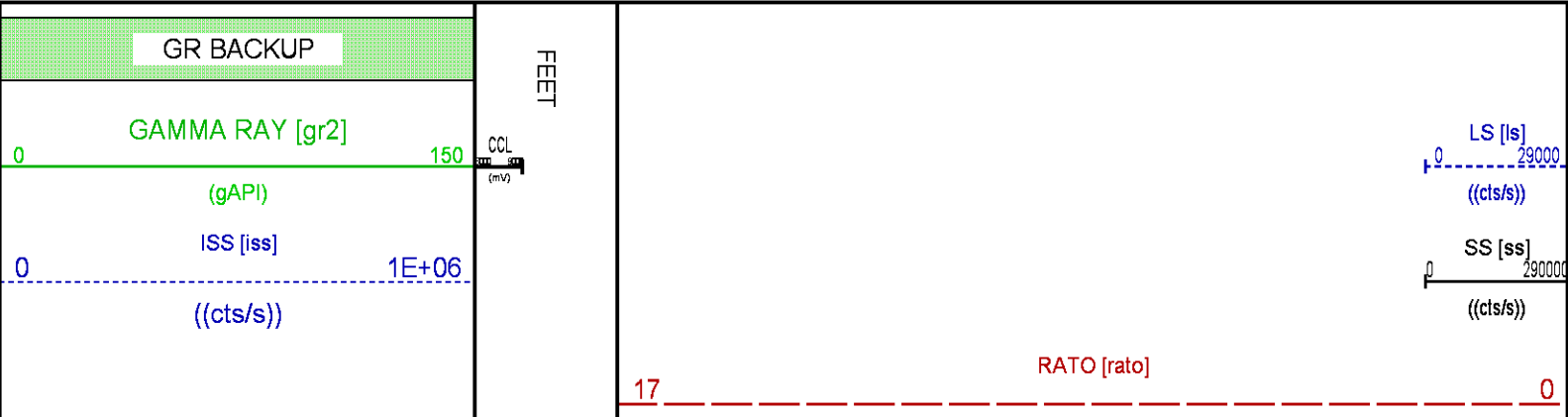
Plotted: Thu Jun 21 15:00:12 2018

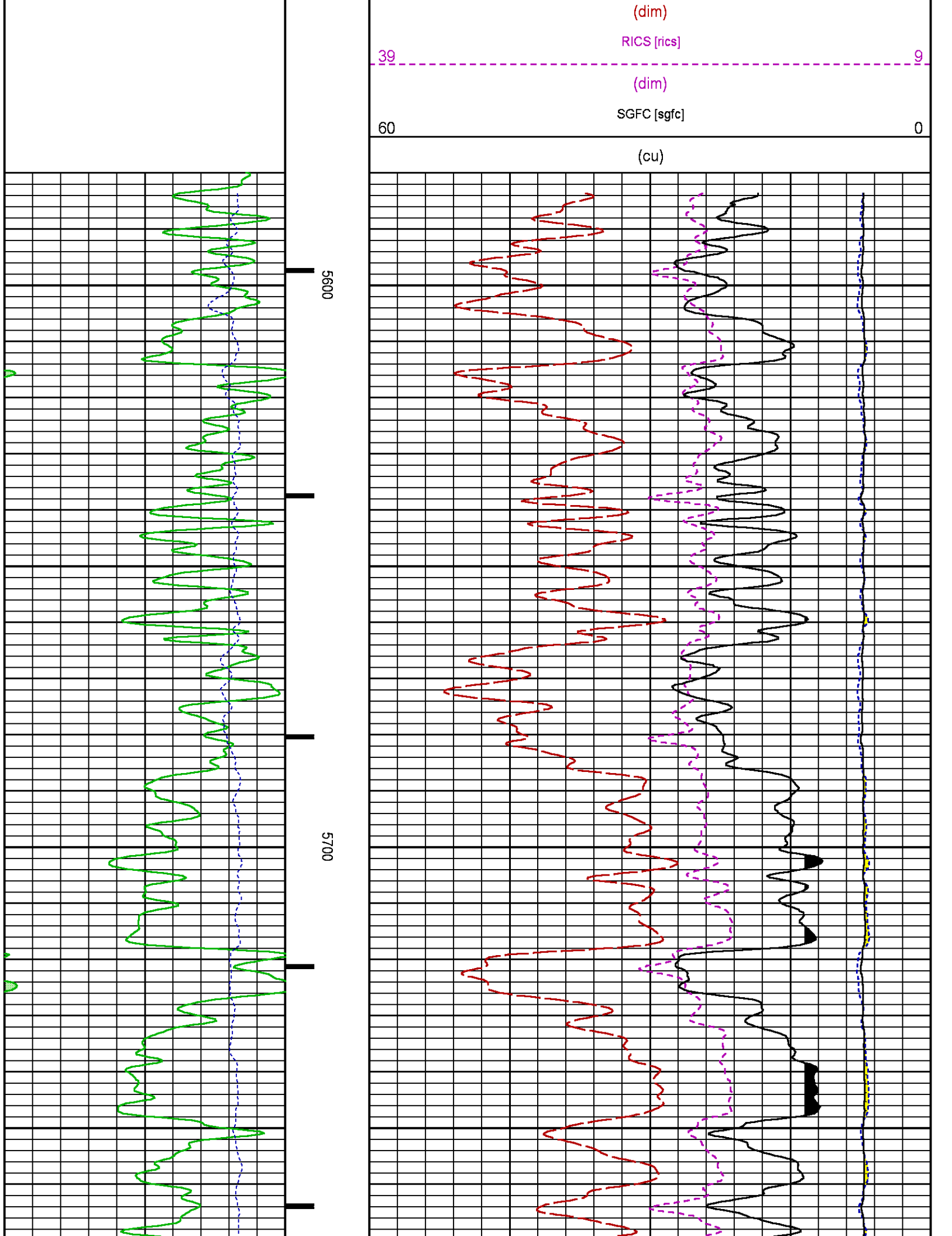
PARAMETER AND FILTER SUMMARY REPORT					
FILE: /dat1a/LARAMIE_GUNDERSON_0994-14-17E/p354h01.prm LOGGING MODE: DEPTH DIRECTION: UP TOP DEPTH: 5570.371 ft BOTTOM DEPTH: 5817.631 ft					
SYMMETRIC FILTER					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
GR	FILTER ()	medium (1)		TOP	BOTTOM
RPM PROCESSING					
MEASUREMENT TYPE	PARAMETER	VALUE	UNITS	INTERVAL (ft)	
PNC Parameters	BOREHOLE CONTENTS	FLUID		TOP	BOTTOM
	OPEN/CASED HOLE	CASED HOLE		"	"
	BOREHOLE SIZE	7.88	in	"	"
	LARGEST CASING OD	4.50	in	"	"
	MATRIX	SANDSTONE		"	"

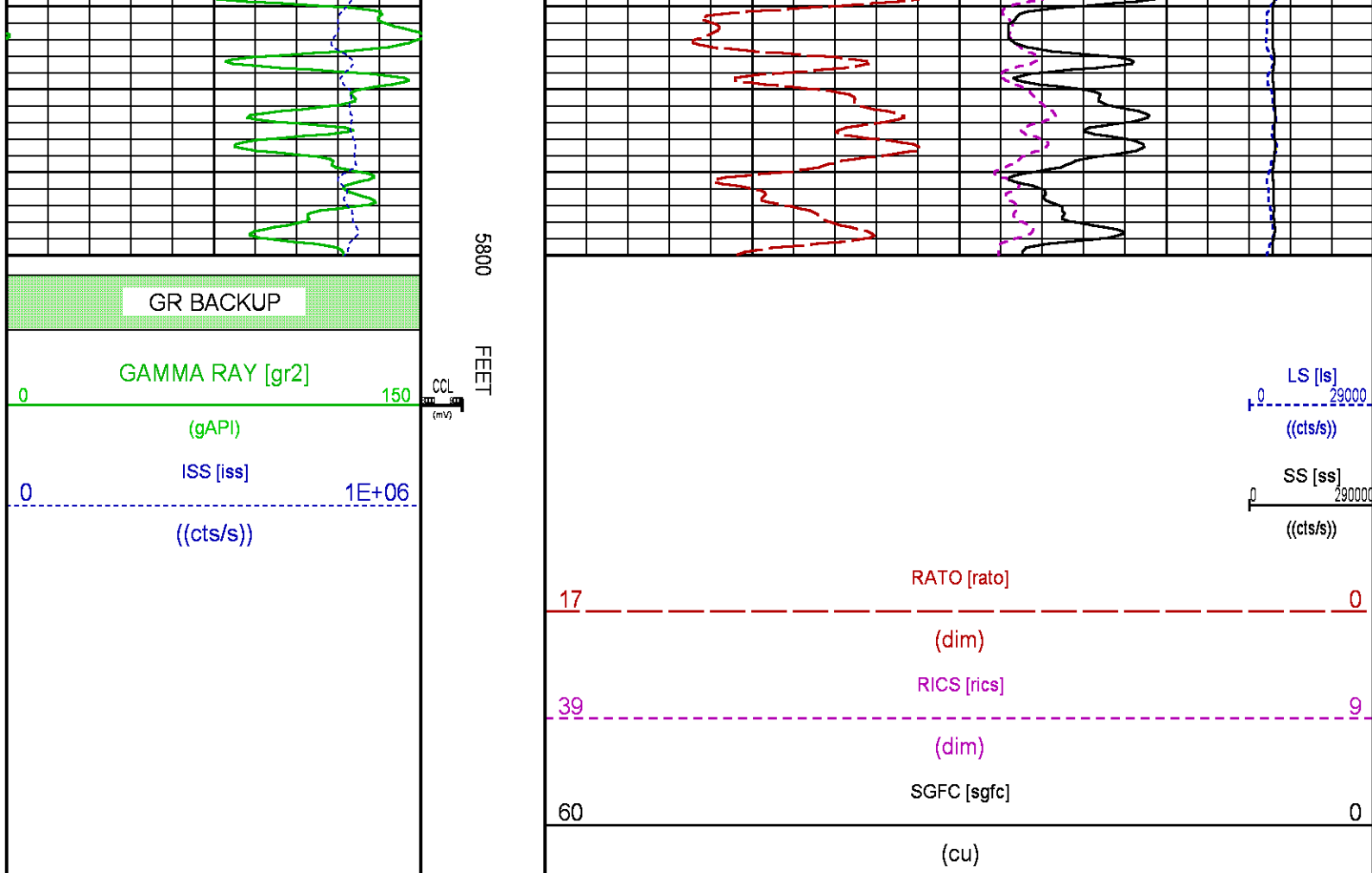
CURVE DESCRIPTION REPORT		
CURVE NAME	CREATION DATE	CURVE DESCRIPTION
F1:CCL	N/A	CASING COLLAR LOCATOR
F1:GR2	N/A	GAMMA RAY 2
F1:ISS	N/A	INELASTIC SHORT SPACE COUNT RATE
F1:LS	N/A	LONG SPACE COUNT RATE
F1:RATO	N/A	SHORT/LONG SPACE COUNT RATE RATIO
F1:RICS	N/A	SHORT SPACE INELASTIC TO CAPTURE COUNT RATE RATIO (ISS/CSS)
F1:SGFC	N/A	BOREHOLE AND DIFFUSION CORRECTED SIGMA
F1:SS	N/A	SHORT SPACE COUNT RATE

CURVE MEASURE POINT OFFSET							
CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)	CURVE	OFFSET (ft)
CCL	-21.75	ISS	-9.50	RATO	-9.50	SGFC	-9.50
GR2	-19.25	LS	-9.50	RICS	-9.50	SS	-9.50

Presentation	: SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/14-17E_RPM_REPEAT.fvpdf [5"/100' Scale]
Plot Interval	: 5580 - 5800 Feet
Data File 1	: F1 : SysA:/dat1a/LARAMIE_GUNDERSON_0994-14-17E/17E_RPM_REPEAT.xtf
Created On	: N/A
Company	: LARAMIE ENERGY LLC
Well	: GUNDERSON 0994-14-17E
Field	: VEGA
File Interval	: 5558 - 5835.5 Feet
OCT	: p354h







CALIBRATION / VERIFICATION SUMMARY

Source File: /dat1a/LARAMIE_GUNDERSON_0994-14-17E/p354h.tp1

GR PRIMARY CALIBRATION SUMMARY

TOOL #: 2812LB 11621284

DATE/TIME PERFORMED: Fri May 11 07:38:13 2018

UNIT #: 3885TD SHAFT1

CALB JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	CR DIFF (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	CALBRTR (gAPI)
GR	63.62	275.42	211.8	0.992	63.08	273.08	210

GR PRIMARY VERIFICATION SUMMARY

TOOL #: 2812LB 11621284

DATE/TIME PERFORMED: Fri May 11 07:40:26 2018

UNIT #: 3885TD SHAFT1

VERI JIG #: 4702NK BA-930

	BACKGROUND (cts/s)	CALBRTR ON (cts/s)	MULT	BACKGROUND (gAPI)	CALBRTR ON (gAPI)	DIFF. (gAPI)
GR	58.89	276.18	0.992	58.39	273.83	215.44
						200.00 220.00

RPM_PNC_3D PRIMARY CALIBRATION SUMMARY

TOOL: 8283PA 10068031

DATE/TIME PERFORMED: Mon May 7 23:51:27 2018

UNIT: 5753XD 111111

CALIBRATOR: 2437XB 112674

SOURCE: 8281AA 10047980

HOURS: 8281AA 63

	ISS	Mtr Vits (V)	SS Gain	LS Gain	XLS Gain	EA Temp (degF)	Sync Delay (usec)	RCAL
Raw Data	802814	119	2217	2481	2198	114	8.0	1.0138
Interpolated	1300000	139	2201	2485	2184			

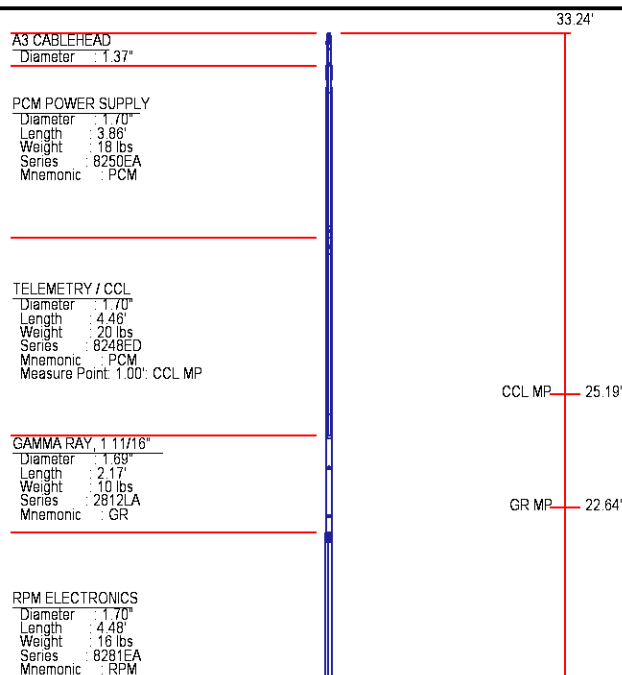
	ISS	BKS	BKL	BKX	SGA1	SDA1	SGA2	SDA2
Raw Data	802814	7129	1185	158	25.96	0.15	24.13	0.33
					25.35 26.40	0.00 0.20	23.60 24.80	0.00 0.40

	ISS	ILS	IXS	SS	SS2	LS	CSS	CLS
Raw Data	802814	174125	28683	86762	30909	8359	52608	13370
Fit Quality %		0.791	0.627	0.866	0.857	0.798	0.841	0.839

	ISS	RBOR	RIN ISS/ILS	RIN13 ISS/IXS	RICS ISS/CSS	RATO SS/LS	RTWO SS2/LS	RONE CSS/CLS
Raw Data	802814	1.44	4.61	28.00	15.26	10.38	3.70	3.94
		1.42 1.45	3.55 5.52	22.20 32.70	10.99 16.34	10.06 11.10	3.57 3.95	3.76 4.22
Fit Quality %		0.030	0.272	1.006	0.137	0.113	0.110	0.077
Reduced	1449874	1.44	4.61	27.83	15.26	10.37	3.69	3.93
		1.42 1.45	4.33 5.52	27.60 32.70	13.70 16.34	10.06 11.10	3.57 3.95	3.76 4.22

INSTRUMENT CONFIGURATION

Source File: /dat1a/LARAMIE_GUNDERSON_0994-14-17E/RPM-tdg



RPM C DETECTOR SECTION

Diameter : 1.70"
Length : 9.40"
Weight : 41 lbs
Series : 8283PA
Mnemonic : RPM
Measure Point: 5.45' XLS MP
Measure Point: 5.04' LS MP
Measure Point: 4.79' SS MP

XLS MP : 13.58'
LS MP : 13.16'
SS MP : 12.91'

RPM SOURCE SECTION

Diameter : 1.70"
Length : 4.70"
Weight : 18 lbs
Series : 8281FA
Mnemonic : RPM

TEMPERATURE / PRESSURE

Diameter : 1.70"
Length : 3.30"
Weight : 13 lbs
Series : 8255XA
Mnemonic : SRPL
Measure Point: 1.52' TEMP MP

TEMP MP : 1.65'
PRES MP : 0.00'

BULL PLUG 1 11/16

TOTAL LENGTH: 33.24'
TOTAL WEIGHT: 140 lbs
MAX DIAMETER: 0"1.70"



COMPANY	LARAMIE ENERGY LLC		FILE NO:	CH136902
WELL	GUNDERSON 0994-14-17E		API NO:	05077105300000
FIELD	VEGA			
COUNTY	MESA	STATE	COLORADO	
LOCATION:		ELEVATIONS:		
SHL: 1076' FSL & 1146' FEL		KB 7302 FT		
BHL: 1076' FSL & 1146' FEL		DF		
		GL 7272 FT		
SEC	14	TWP	9S	RGE 94W
		DATE		21-Jun-2018